

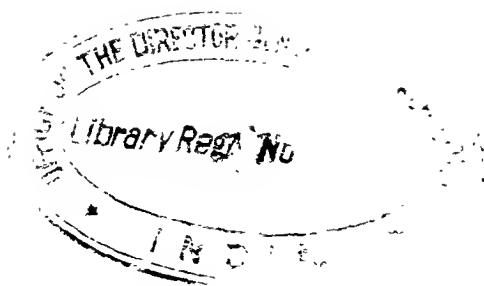
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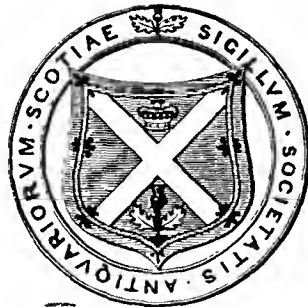
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TABLE OF CONTENTS

	PAGE
Anniversary Meeting, 1934,	I
More Shetland Tombstones. By Sir GEORGE MACDONALD, K.C.B., LL.D., D.Litt., F.B.A., H.R.S.A., President.	27
Excavation of the Vitrified Fort of Finavon, Angus. By Professor V. GORDON CHILDE, B.Litt., F.S.A.Scot.,	49
Notes on some Duns in Islay. By Professor V. GORDON CHILDE, B.Litt., F.S.A.Scot., . .	81
An Account of the Excavation, on behalf of H.M. Office of Works, of another Prehistoric Dwelling (No. V.) at Jarlshof, Sumburgh, Shetland, in the Summer of 1934. By ALEXANDER O. CURLE, C.V.O., F.S.A.Scot., F.S.A.,	85
A Fort at Skitten, Wick, Caithness, with Notes on Flint Implements from the same County. By Mrs L. DUFF-DUNBAR, F.S.A.Scot.,	108
Rock Sculpturings on Traprain Law, East Lothian. By ARTHUR J. H. EDWARDS, F.S.A.Scot., Assistant Keeper of the National Museum of Antiquities of Scotland, . .	122
Early Scottish Spoons. By Commander G. E. P. HOW, R.N., F.S.A.Scot.,	138
Unrecorded Berwickshire Antiquities, being the Chalmers-Jervise Prize Essay for 1933. By ROBERT KINGHORN,	157
An Account of the Excavation of the Stone Circle at Loanhead of Daviot, and of the Standing Stones of Cullerlie, Echt, both in Aberdeenshire, on behalf of H.M. Office of Works. By H. E. KILBRIDE-JONES, F.S.A.Scot.,	168
The Barony, Castle, and Church of Rothiemay. By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot.,	223
The Small Flint Knives of Orkney. By A. D. LACAILLE, F.S.A.Scot.,	251
A Cinerary Urn at Horsburgh Castle Farm, Parish of Innerleithen, Peeblesshire. By ARTHUR J. H. EDWARDS, F.S.A.Scot., Assistant Keeper of the National Museum of Antiquities of Scotland,	262
An Account of the Excavation of a Dwelling of the Viking Period at "Jarlshof," Sum- burgh, Shetland, carried out on behalf of H.M. Office of Works. By ALEXANDER O. CURLE, C.V.O., F.S.A.Scot., F.S.A.,	265
A Long, Stalled Cairn, the Knowe of Yarrow, in Rousay, Orkney. By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the National Museum of Antiquities, and WALTER G. GRANT, F.S.A.Scot.,	325
A Bronze Age Cemetery at Knappers, Kilbowie, Dumbartonshire. By J. M. DAVIDSON, O.B.E., F.C.I.S., F.S.A.Scot.,	352

TABLE OF CONTENTS.

	PAGE
Beaker from a Cist at Mill Farm, Rathen, near Fraserburgh, Aberdeenshire, and a Cist Cremation Interment at Ury, Stonehaven, Kincardineshire. By Professor ALEX. LOW, M.A., M.D., F.S.A.Scot.,	382
Heraldic Decoration on the Castles of Huntly and Balvenie. By THOMAS INNES OF LEARNEY, F.S.A.Scot., Carrick Pursuivant of Arms,	387
A Short Cist found at Bridge Farm, near Meikleour, Perthshire. By JOHN RITCHIE, F.R.A.I. With a Description of the Skeletal Remains by Professor D. RUTHERFORD DOW, M.D., F.R.S.E.,	401
Sculptured Rock; Holy-water Stoup; and Sarcophagus at Luss. By A. D. LACAILLE, F.S.A.Scot.,	416
The Metallurgical Analysis of Three Bronze Age Axes. By Lieutenant-Commander S. S. CRICHTON MITCHELL, R.N., and MARGARET E. CRICHTON MITCHELL, Ph.D., F.S.A.Scot.,	424
Earth-house at Portnacoon, Sutherland. By Dr R. J. BUXTON,	431
Jubilee Address to H.M. the King,	434
The Tardenoisian Micro-Burin in Scotland. By A. D. LACAILLE, F.S.A.Scot.,	443
An Aberdeenshire Iron Age Miscellany: (1) Stone Circle at Foularton; (2) Bronze Terret from Rhyndie, and Distribution of the Type. By H. E. KILBRIDE-JONES, F.S.A.Scot.,	445
The Cairnmuir Gold Terminal: A Parallel, and a Possible Explanation of its Use. By JOHN D. COWEN, M.A., F.S.A.,	455
The Castles of Dunnideer and Wardhouse, in the Garioch, Aberdeenshire. By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot.,	460
A Fragment of a Thirteenth-century Calendar from Holyrood Abbey. Edited by FRANCIS WORMALD, M.A., F.S.A.,	471
The Chambered Cairn of Clettraval, North Uist. By W. LINDSAY SCOTT, F.S.A.Scot., F.S.A.,	480

LIST OF ILLUSTRATIONS

	PAGE		PAGE
Communion Cup of the Kirk of Dalry, Ayrshire,	10	Jarlshof, Sumburgh, Shetland: Whale's Vertebra inserted in wall.	90
Hall-marks on do. (enlarged),	11	— — — — — Quern Stone with its Rubber, <i>in situ</i> ,	91
Cinerary Urn from Blackburn Mill, Berwick- shire,	12	— — — — — Pots of Steatite, <i>in situ</i> ,	92
Food-vessel from Costerton Mains, Mid- lothian,	13	— — — — — Four Pots of Steatite found in chamber,	93
Grave-slabs at Kilmory Knap, Argyll, . .	17-8	— — — — — Outer court,	94
Cross-slab at do.,	19	— — — — — Stair to Dwelling No. i,	95
Effigy at do.,	19	— — — — — Implements of Slate,	97
Penannular Gold Armlet from Berwickshire, Epitaph of Hinrick Segeleken at Lunda Wick,	20 28	— — — — — Rudely fashioned Imple- ments of Stone,	98
Epitaph of Segebad Detken at do., . . .	29-30	— — — — — Implements of Bone,	99
Epitaph of Commander Claes Jansen Bruyn at Culbinsburgh,	38	— — — — — Stone Polishers,	100
Tombstone of Gilbert and Katharine Neven at Reafirth,	41	— — — — — Shovel-like Implements,	101
Tombstone of Barbara Neven at do., . .	43	— — — — — Vessels of Pottery,	102
Air Photograph of Finavon Hill,	49	— — — — — Sections of sherds of Red Ware with thick bases,	103
Finavon Hill Fort: Plan,	50	Fort at Skitten, Caithness: Plan, . . .	108
— — — — — Sections of ramparts,	51	Flint Knife, Axe, and Spear-head from Caithness,	112
— — — — — Inner face of south rampart, . .	54	Beaker from Glengolly, Caithness, . .	116
— — — — — Inner face of north rampart, . .	58	Roek Sculptures on Traprain Law: View from east,	122
— — — — — Outer face, north rampart, . . .	59	— — — — — Relative positions,	123
— — — — — Hearth A and oven in sec- tion C,	62	— — — — — View of Area A divided into sections,	124
— — — — — Plan of section C,	63	— — — — — Area A, section 1, showing Calvary Cross,	125
— — — — — Hearth B in do.,	65	— — — — — Area A, sections 2, 3, and 4,	126
— — — — — Inner face of wall in sec- tion D,	66	— — — — — Conventionalised figures of human beings, and signs resembling tectiform symbols,	127
— — — — — Sections across the well,	68	— — — — — Area A, sections 5, 6, 7, 7A, 9,	128-31
— — — — — Views down well,	68-9	— — — — — Area B,	132
— — — — — Sections of rims and bases, and of Crucible,	71	— — — — — Area C,	134
— — — — — Flint Implements,	72	Sculptured Block from Harelawside, Berwickshire,	135
— — — — — Jet Ring. Ornamented Whorl, Crucible, and Incised Sherds, . .	74	Canongate Spoon,	139
Jarlshof, Sumburgh, Shetland: Plan of Group of Prehistoric Dwellings, Nos. I. to V.,	86	Spoon found in Irvine,	140
— — — — — Sections of do.,	87	Spoons from Hill of Culrain, Ross-shire, .	142
— — — — — Inner and earlier section, . . .	88	Dundee Spoon,	143
— — — — — Enclosed area in inner section,	89	Spoon dug up in Haddington,	144

	PAGE		PAGE
Inverness Spoon,	145	Rothiemay Castle: Plans,	236
Ayr Spoon,	145	— — — View from north-west,	237
Montrose Spoons (front),	147	— — — View from south,	239
— — — (back),	148	— — — Dovecot,	242
Fourteenth-century Spoons from Brechin and East Lothian,	149	Old Church of Rothiemay: Plan of founda- tions,	244
Apostle Spoons,	150-1	Orkney Flint Implements with battered back,	254
Spoon—unascrbed make,	152	Australian Steep-backed Knife of Hornstone handled with Kangaroo Skin (after Evans). Sordes, Mont-de-Marsan (Landes). Azilian <i>canifs</i> (after Breuil and Dubalen). Azilian Flake Implement (after Breuil and Duba- len). Australian Surgical Knives of Jasper,	258
Edinburgh Spoons,	153	Palæolithic and Mesolithic Knives or Points,	261
Aberdeen Spoon,	154	Cinerary Urn from Horsburgh Castle Farm,	263
Two (possibly) Greenock Spoons and another (front),	155	Viking Dwelling, Jarlishof, Sumburgh, Shetland:—	
— — — (back),	156	Alley-way between two buildings,	267
Siccar Point Fort: Plan,	157	Interior from the south end, after excavation,	268
Corn Fort, Eyemouth: Plan,	159	Inner face of Wall showing method of construction,	268
Lamberton Shiels Fort: Plan,	160	Interior from the north end,	269
Hareheugh Craigs Fort: Plan,	161	East Entrance from the interior,	270
Plans of Haly Jo Fort; Pettico Wick Fort; Brander Heugh Fort; Greenlaw Rock Defence; Camp Field Fort; and Home- stead at Pilnuir. Lauder,	164	Paved Passage on the exterior at southern end,	271
Cultivation Terraces, Chester Hill Fort: Plan,	167	Southern Entrance and Paved Passage in interior,	272
Stone Circle at Loanhead of Daviot, Aberdeenshire:—		Section of Norse House. Plate <i>facing page</i> Interior with Kerb of <i>Pallr</i> in centre,	276
View,	169	Fireplace and Oven beyond,	277
Beaker Pottery,	173	The Oven,	278
View of Centre Ring Cairn and Pit,	176	Secondary Cross Wall in foreground,	279
Stony area on S. and W. of Recumbent Stone,	180	Secondary Hearth in the <i>Stofa</i> ,	280
Section through Recumbent Stone,	181	Secondary Hearth in the <i>Skáli</i> ,	281
Details of Cist,	185	Side Wall constructed upon the <i>Pallr</i> in the latest period,	282
Incense Cup Urn,	186	The north end showing <i>in situ</i> Flooring Stones of each period,	283
Section through Monolith and Crater No. 3,	188	Burnt Clay showing impressions,	286
Cup-marks on Stone No. 9,	189	Implements of Bone from the north-east Midden,	289
Plan and Sections. Plate I. <i>facing page</i> Details of Centre Pit. Plate II. <i>facing page</i> Plan and Sections of Secondary Floor. Plate III. <i>facing page</i>	196	Two sides of one of a pair of long Combs,	289
Restored Iron Age Vessels,	200	Iron Objects: Knife-blades, Rings, etc.,	290
Rims of Type 1, Period 1,	202	Mould and Lamp,	291
Rims of Types 2 and 3, Period 2,	204	Parts of Padlocks,	291
Rims of Type 4, Period 2. and of Type 5, Period 3,	206	Collection of Bone Pins and Bodkins,	292
Rims of Type 2, Period 3; Type 6, Period 4, and Miscellaneous Rims,	207	Turn-buckle or Sneek of Bone,	294
Bases from Centre Pit and Rims from Secondary Floor,	211	Bowl of Steatite,	294
Stone Circle at Culterdie, Aberdeenshire,	215	Pins of Bone,	294
— — — Plans and Sections. Plate IV. <i>facing page</i> Sketch-map of Rothiemay and District,	218		
Symbol Stone at Tillytarmont,	227		
Symbol Stone from North Redhill,	228		

LIST OF ILLUSTRATIONS.

ix

PAGE	PAGE
Viking Dwelling. Jarlshof. Sumburgh, Shetland (<i>contd.</i>):—	Knowe of Yarso: Flint Arrow-heads. 335
Terminal. Dress Fastener. and Playing- piece of Bone. 295	— — — Flint Scrapers and other Imple- ments. 336
Miscellaneous relics from the interior of the dwelling and the wall-heads. 296	— — — Flint Graver (burin). 337
Bone Implements from interior of house. 297	— — — Pointed Implements of Bone. 338
Fragments of Sheet Bronze. 297	— — — Skulls. 345, 348-9
Combs of Bone. 298	Bronze Age Cemetery at Knappers, Kil- bowie, Dumbartonshire:—
Fragment of a Crucible. 299	Flint Adze. 353
Hones perforated for suspension, and a Polisher. 300	Ring-marked Stone. 354
Haunched Hones. 300	Objects of Bronze, Flint, Lignite, etc.. . . . 356
Fish-hook of Iron. 301	Grave Deposit, No. 17. 364
Iron Ship-bolts with lozenge-shaped heads. . . . 301	— — — No. 24. 367
Tooth of Hackle. 302	Stone for grinding stone axes. 371
Loom-weights. 302-3	Food-vessel and base of another. 373
Base of Weight. 303	Food-vessels. 374-5
Loom-weight with graffiti on two surfaces. . . . 304	Plan of. Plate I, facing page 376
Bronze Padlock Key. 304	Beaker from Cist at Mill Farm, Rathen. 383-4
Quartz Pebbles, probably used in a game. 305	Contents of Cist Cremation Interment at Ury. 385
Typical Potsherds. 306	Huntly Castle: View of "Palace" from the south, after conservation. 387
Sections of Potsherds and diagrammatic drawing of Pin-head. 307	— — — View of Great Door. 389
Tablet with drawing of Viking ship on obverse and criss-cross ornament on reverse. 309	— — — Arms of the fourth Earl of Huntly and his wife, Elizabeth Keith, on north wall of "Palace." 391
Drawing of graffiti, as shown on fig. 46. 309	— — — Great Fireplace. 392
Tablets of Slate with graffiti markings. 311	— — — Detail of do.. . . . 393
Drawings of tablets with graffiti markings. . . . 312	— — — Fireplace on second floor of "Palace." 394
Tablets of Slate and Stone with graffiti markings. 313	Beakers from a Short Cist at Cawdor, Nairn. . . . 398
Tablets with graffiti markings. 314	Short Cist found at Bridge Farm, near Meikleour. 402
Drawings of tablets with graffiti markings. 315	— — — View of mound containing. 402
Tablet with curvilinear graffiti. 316	— — — Fragment of Cinerary Urn from. . . . 403
Drawing of tablet with do.. . . . 316	Meikleour Cist Skull. 406-8
Portion of a Plate of Steatite. 318	— — — Maxillæ from, showing wear on the crowns of the teeth. 409
Whorls and Beads. 319	— — — Mandible from, showing wear on the crowns of the teeth. 410
Model of Upper Stone of a Shetland Mill. 320	Meikleour Cist, right femur from, showing platymeria. 413
Stone with Scribings found in Broch of Jarlshof. 321	Sculptured Rock near Shegartan Farm. Luss. 416
Chambered Cairn. Knowe of Yarso: Plan and Sections. 326	— — — — — Key. 417
— — — from south-east. 327	Holy-water Stoup from Glenfruin. 418
— — — from east and north-west, show- ing outer and inner walls. 329	Sarcophagus at Luss. 420-1
Midhowe Chambered Cairn, showing face of outer wall with string course and slant of stones reversed. 330	— — — Key. 423
Knowe of Yarso: Cells. 331	Section of Irish Flat Axe of Copper. 425
— — — Pottery fragments showing basal part of food-vessel. 335	Breton Socketed Axe. 428
	Portnacoon Earth-house: Entrance from interior. 432
	— — — Inner end. 433

LIST OF ILLUSTRATIONS.

	PAGE		PAGE
Inscribed Stone from Ruigh-ic-ille Mhuire, Inverness-shire,	436	Chambered Cairn, Cleittraval. Entrance Passage of Fort, showing slab-covering of the Drain.	482
Symbol Stone from Drumbuie, Inverness- shire,	436-7	— Secondary Hut abutting on Wall of Fort.	483
Stone Cup from Altnamain, Edderton.	439	— Section I. of Chamber, looking south.	484
Tardenoisian Micro-burins, from Dryburgh Mains, and Birkwood, Banchory.	445	— Sections I. and II. of Chamber, looking west from Section III.,	485
Sections of Iron Age Pottery from Stone Circle, at Foularton.	448	— Section III. of Chamber, looking east from Section II.,	485
Bronze Terret from Rhynie.	449	— Sections I., II., and III. of Chamber, looking west from Section IV.,	486
Donside type of Celtic Bronze Terrets.	449	— The south Façade, looking south.	488
Distribution of the "Don" type of Celtic Terret.	449	— Pit.	489
Samian Ware found near Rhynie.	454	— Path leading up to the Portal.	490
Gold Object from Cairnmuir, Peeblesshire.	455	— Abutments of northern Façade, and section of dry walling.	491
Bronze Terrets from France.	456-7	— Peristalith.	493
Dunnideer: General view from east.	460	— Pottery Vessels, 500-502, 504, 506-514	
Dunnideer Castle: Plan of tower,	461	— Objects of Granite and of Pumice,	515
— — — Views of tower from east and west.	461-2	— Iron Age Pottery,	516, 517
Dunnideer: General plan showing mediæval tower, vitrified fort, and earthworks.	463	— — — from Fort.	517-518
— Vitrified mass <i>in situ</i> , on north side of fort,	464	— — — Pottery from Chamber. 519, 520, 522-524	
— View of inner ditch and rampart,	464	— Plan of Tomb and Fort, Plate I. <i>facing page</i>	536
Plan of moated homestead at Wardhouse,	465	— Sections and Façade Elevation of Tomb.	Plate II. <i>facing page</i> 536
Holyrood Calendar (July).	472		
— — — (October).	473		

L A W S
AND
LIST OF FELLOWS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND

L A W S
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

INSTITUTED NOVEMBER 1780 AND INCORPORATED BY
ROYAL CHARTER 6TH MAY 1783.

(Revised and adopted November 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHEOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.

2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.

3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two members of the Council. Admission shall be by ballot.

4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology, who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council and balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on the 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the list of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years.

One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other Office-Bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreement subsisting between the Society and the Government, the Board of Manufactures (now the Board of Trustees) shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

18. The Annual General Meeting of the Society shall take place on St Andrew's Day, the 30th of November, or on the following day if the 30th be a Sunday.

19. The Council shall have power to call Extraordinary General Meetings when they see cause.

20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

21. Every proposal for altering the Laws must be made through the Council; and the Secretaries, on instructions from the Council, shall cause intimation thereof to be made to all the Fellows at least one month before the General Meeting at which it is to be determined on.

FORMS OF BEQUEST.

Form of Special Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

General Form of Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ sterling [*to be used for the general purposes of the Society*] [or, *to be used for the special purpose or object of*], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being.

LIST OF THE FELLOWS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND,

NOVEMBER 30, 1935.

PATRON :
HIS MAJESTY THE KING.

- | | |
|--|---|
| 1932.*ADAM, DAVID RANKINE, 76 Stewarton Drive, Cambuslang. | 1902.*ANDERSON, Major ROBERT DOUGLAS, c/o The Manager, Lloyd's Bank, Paignton, Devon. |
| 1931. AGNEW, Rev. HUGH M., M.A., Minister of St George's Presbyterian Church, 20 St James Road, East London, South Africa. | 1920. ANDERSON, Rev. ROBERT S. G., B.D., The Manse, Castle Kennedy, Wigtownshire. |
| 1917. AGNEW, STAIR CARNEGIE, M.A. LL B., Barrister-at-Law, 60 Elm Park Gardens, London, S.W. 10. | 1913. ANGUS, Miss MARY, Immeriach, 354 Blackness Road, Dundee. |
| 1892. AILSA, The Most Hon. The Marquess of, Culzean Castle, Maybole. | 1921. ANGUS, WILLIAM, Curator of the Historical Department, Record Office, H.M. General Register House, Edinburgh, 2. |
| 1932. AINSWORTH, RICHARD, Author and Lecturer, Longmead, 54 Lauderdale Avenue, Cleveleys, near Blackpool. | 1926.*ANGUS-BUTTERWORTH, L. M., F.R.G.S., F.Z.S., Lea Hurst, Dunham-Massey, Cheshire. |
| 1929. ALEXANDER, W. M., Journalist, Hillview Road, Cults, Aberdeenshire. | 1910. ANNAN, J. CRAIG, Glenbank, Lenzie. |
| 1930. ALLAN, Mrs H. M., 10 Ainslie Place, Edinburgh, 3. | 1897. ANSTRUTHER-GRAY, WILLIAM, Lieut.-Col., Royal Horse Guards, Kilmany, Fife. |
| 1926. ALLAN, WILLIAM, M.B.E., Rhindmuir House, Baillieston. | 1931. ARBUCKLE, WILLIAM F., M.A. (Edin. & Oxon.), H.M.I.S., 1 Murrayfield Gardens, Edinburgh, 12. |
| 1929. ANCKORN, WILFRED LORRAINE, Three-Corner Mead, Dunton Green, Kent. | 1931. ARCHER, GILBERT, St Ola, Park Road, Leith, Edinburgh, 6. |
| 1925. ANDERSON ALEXANDER HUTTON, M.A., Donaldson's Hospital, Edinburgh, 12. | 1918.*ARGYLL, His Grace The Duke of, Inveraray Castle. |
| 1922.*ANDERSON, ARTHUR R., 6 Bowmont Terrace, Glasgow, W. 2. | 1910. ARMSTRONG, A. LESLIE, M.C., F.S.L., F.S.A., 27 Victoria Road, Stockton Heath, Warrington. |
| 1922. ANDERSON, ERIC S., 5 Eildon Street, Edinburgh, 4. | 1921. ARNOTT, JAMES ALEXANDER, F.R.I.B.A., 34 Frederick Street, Edinburgh, 2. |
| 1897. ANDERSON, Major JOHN HAMILTON, 2nd East Lancashire Regiment, c/o Messrs Cox & Co., 16 Charing Cross, London, S.W. 1. | 1910. ASHER, JOHN, 13 Pitcullen Crescent, Perth. |
| 1934. ANDERSON, Rev. JOHN, Sconser, Portree, Isle of Skye. | 1924. ASHWORTH, Mrs, Hillbank, Grange Loan, Edinburgh, 9. |
| | 1931. ASKEW, GILBERT H., Casula, Corbridge-on-Tyne, Northumberland. |

An asterisk (*) denotes Life Members who have compounded for their Annual Contributions.

- 1917.*ATHOLL, His Grace The Duke of, K.T., C.B., M.V.O., D.S.O., LL.D., Blair Castle, Blair Atholl.
1915. BAILLET DE LATOUR, The Countess Vincent, The Beehive, Uiginish, Dunvegan, Skye.
1932. BAILLIE, JAMES M'KENZIE, 17 Alpin Road, Dundee.
1933. BAIN, F. W., M.C., 29 Palace Court, London, W. 2.
- 1922. BAIN, Rev. JOHN, Minister of St Paul's Church, 13 Dryden Place, Newington, Edinburgh. 9.
1925. BAIRD, JAMES, 81 Meadowpark Street, Dennistoun, Glasgow, E. 1.
1922. BAIRD, WILLIAM MACDONALD, F.F.S., 7 St Colme Street, Edinburgh, 3.
1923. BALFOUR, Miss, Whittingehame, Haddington, East Lothian.
1918. BALFOUR, Lieut.-Col. FREDERICK ROBERT STEPHEN, M.A., D.L., Dawyck, Stobo, Tweeddale.
1933. BALFOUR, The Hon. JAMES MONCREIFF, O.B.E., 44 Gloucester Square, London, W. 2.
1926. BALFOUR-MELVILLE, EVAN W. M., M.A., Lecturer in History in the University of Edinburgh, 2 South Learmonth Gardens, Edinburgh. 4.
- 1915.*BALLANTINE, JAMES, 24 Hill Street, Edinburgh, 2.
1933. BALLINGALL, GEORGE W., Dalgynch, 20 Midmar Gardens, Edinburgh, 10.
1921. BANERJEA, RASBIHARI, M.B., F.I.A.Sc., Post Box, No. 10805, Calcutta, India.
1926. BANNERMAN, JOHN, St Margarets, Elgin.
1928. BANNERMAN, Captain RONALD R. BRUCE, M.C., 19 Dornon Road, South Croydon.
1931. BARCLAY, Rev. WILLIAM, M.A., Minister of St Magnus Cathedral, The Manse, Kirkwall, Orkney.
- 1897.*BARNETT, Rev. T. RATCLIFFE, Ph.D., 7 Corrennie Gardens, Edinburgh, 10.
1922. BARRIE, JOHN ALEXANDER, 11 Lady Road, Edinburgh. 9.
1910. BARRON, Rev. DOUGLAS GORDON, O.B.E., V.D., D.D., Arthouille, Aberfoyle.
1923. BARRON, EVAN MACLEOD, Proprietor and Editor of *The Inverness Courier*, Oaklands, Inverness.
1909. BARTHOLOMEW, JOHN, O.B.E., of Glenorchard, Sheriff-Substitute of Lanark, Nunholm, 9 Victoria Circus, Glasgow, W. 2.
1922. BARTON, Dr SAMUEL SAXON, O.B.E., F.R.F.P.S. (Glas.), L.R.C.P. (Edin.), 61 Parkfield Road, Sefton Park, Liverpool, 17.
1931. BATHGATE, THOMAS D., Gersa Schoolhouse, Watten, Caithness.
1927. BATTERSBY, JAMES, F.R.C.S.Eng., etc., Dean of the Faculty of St Mungo's Medical College, Edenkerry, Helensburgh.
1930. BAXTER, WILLIAM, Public Works Contractor, Eskdale, 153 High Street, Tranent.
- 1884.*BEATON, Major ANGUS J., C.M.G., V.D., Trouville, Evesham Road, Pittville, Cheltenham.
1931. BEATTIE, DAVID J., Sculptor, Kenilworth, Talbot Road, Carlisle.
1930. BEATTIE, Miss ISOBEL H. K., A.R.I.B.A., Breconrae, Ruthwell, R.S.O., Dumfriesshire.
- 1929.*BELL, Rev. WILLIAM NAPIER, M.A., 37 Oakfield Avenue, Glasgow, W. 2.
1925. BENNET, Rev. ALEXANDER LYON, B.A., The Mause, Chryston, Glasgow.
1924. BENTINCK, Rev. CHARLES D., D.D., Barney-mains, Haddington.
1928. BESTON, Miss SYLVIA, M.A. (Camb.), B.Litt., 6 Winchester Road, Oxford.
1929. BERTRAM, DONALD, Manager, Orkney Steam Navigation Co., Ltd., 20 East Road, Kirkwall.
1925. BEVERIDGE, JAMES, M.A., Wellbank, Lindlithgow.
1930. BEVERIDGE, Rev. JOHN, M.B.E., B.D., Broomhouse Road, Corstorphine, Edinburgh, 12.
1927. BICKERSTETH, Miss MARGUERITE ELIZABETH, Ph.D., 32 Stafford Street, Edinburgh. 3.
1919. BINNIE, R. B. JARDINE, Old Place, Hampton Court.
- 1932.*BIRLEY, ERIC, M.A., F.S.A., Chesterholm, Bardon Mill, Northumberland.
1909. BISHOP, ANDREW HENDERSON, Thornton Hall, Lanarkshire.
1922. BISHOP, FREDERICK, Ruthven House, Colinton.
1924. BISSET, ALEXANDER MACDONALD, Bertha Cottage, Bathgate.
1933. BLACKATER, JOHN C., Jr., F.R.G.S., F.Z.S.(Scot.), The Chemical Laboratory, 570 Gallowgate, Bridgeton, Glasgow, S.E.
1932. BLACKWOOD, ROBERT, J.P., 9 Oxford Street, Dundee.
1934. BLACKWOOD, WILLIAM, J.P., Lindores, Lyon Road, Harrow.
1926. BLAIR, GEORGE, 8 Crown Road North, Glasgow, W. 2.
1929. BLAIR, ROBERT K., W.S., 20 Chester Street, Edinburgh, 3.
1909. BLUNDELL, Rev. ODO, O.S.B., 7 Holly Road, Fairfield, Liverpool.
1885. BOMPAS, CHARLES S. M., 121 Westbourne Terrace, Hyde Park, London, W. 2.
1917. BONAR, JOHN JAMES, Eldinbrae, Lasswade.

1928. BONNAR, WILLIAM, 51 Braid Avenue, Edinburgh, 10.
1928. BORENIUS, TANCRED, Ph.D., D.Lit., Professor of the History of Art in the University of London, 28 Kensington Gate, Kensington, London, W. 8.
- 1903.*BORTHWICK, HENRY, of Borthwick Castle, Midlothian, 122 Gt. Western Road, Glasgow.
1932. BOSWORTH, WILLIAM GEORGE, Librarian and Curator, Public Library, Museum, and Public Hall, Altrincham.
1927. BRADLEY, Rev. WILLIAM, St Anne's, Windsor Gardens, Musselburgh.
1927. BREWER, GEORGE E., Jr., Labor-in-Vain Road, Ipswich, Massachusetts, U.S.A.
1927. BREWER, Mrs GEORGE E., Jr., Labor-in-Vain Road, Ipswich, Massachusetts, U.S.A.
1928. BROOK, GEORGE BERNARD, F.I.C., M.Inst.M.M., F.C.S., The Research Laboratories, Kinlochleven.
1908. BROOK, WILLIAM, 87 George Street, Edinburgh, 2.
1928. BROUGH, WILLIAM, 42 Dundas Street, Stromness, Orkney.
- 1906.*BROWN, ADAM, Netherby, Galashiels.
1932. BROWN, CECIL JERMYN, M.A., Buccleuch House, Melrose.
1924. BROWN, CHARLES HERBERT, K.C., Sheriff of the Lothians and Peebles, 11 Grosvenor Crescent, Edinburgh, 12,—*Vice-President*.
- 1921.*BROWN, DONALD, 80 Grosvenor Street, West Hartlepool.
1933. BROWN, Sheriff GEORGE, Berstane House, St Ola, Orkney.
1921. BROWN, THOMAS, A.R.I.B.A., Lecturer and Chief Assistant, Department of Building, Heriot-Watt College, Edinburgh, 1.
1932. BROWNLEE, DAVID ANGUS, Brownlee Cottage, Colston, Bishopbriggs.
- 1922.*BRUNWIN, GEORGE EUSTACE, Haverings, Rayne, Braintree, Essex.
1902. BRYCE, Emeritus Professor THOMAS H., M.A., M.D., F.R.S., The Loaming, Peebles.
- 1922.*BRYDEN, ROBERT LOCKHART, B.L., 12 Selborne Road, Jordanhill, Glasgow.
1933. BUCHAN, JAMES, Editor, *Dundee Telegraph*, 65 Blackness Avenue, Dundee.
1931. BUCHANAN, ALEXANDER GRAHAME, M.B., Ch.B., 9 Clarence Drive, Hyndland, Glasgow.
1927. BULLOCH, JOHN MALCOLM, M.A., LL.D., 45 Doughty Street, London, W.C. 1.
- 1887.*BURGESS, PETER, View Ville, Duminadroit, Inverness.
1925. BURNET, J. R. WARDLAW, Advocate, 60 Northumberland Street, Edinburgh, 3.
1892. BURNETT, Rev. J. B., B.D., D.D., The Manse, Fetteresso, Stonehaven.
1911. BURNETT, Rev. WILLIAM, B.D., 8 Bellevue Terrace, Edinburgh, 7.
1934. BURNS, JOHN C., B.A., Assoc.M.Inst.C.E., 138 Newhaven Road, Edinburgh, 6.
- 1925.*BURNS, JOHN GEORGE, Sheriff-Substitute of Dumbartonshire, Sheriff's Chambers, County Buildings, Dumbarton.
1887. BURNS, Rev. THOMAS, C.B.E., D.D., F.R.S.E., Croston Lodge, 3a Chalmers Crescent, Edinburgh, 9.
1933. BURNS, THOMAS PILKINGTON, Mortimer Lodge Mortimer, Berkshire.
1925. BURNSIDE, Rev. JOHN W., M.A., 505 Strathmartine Road, Dundee.
1928. BURRELL, Sir WILLIAM, Hutton Castle, Berwick-upon-Tweed.
1927. BUSHNELL, GEORGE H., University Librarian, St Andrews, 19 Queen's Terrace, St Andrews.
- 1901.*BUTE, The Most Hon. The Marquess of, K.T., Mount Stuart, Rothesay.
1929. CAIRNS, ADAM, 21 Monreith Road, Newlands, Glasgow, S. 3.
1931. CALDER, CHARLES C., Presley Cottage, Dunphail, Morayshire.
- 1921.*CALDER, CHARLES S. T., A.R.I.A.S., Assistant Architect, Royal Commission on Ancient Monuments (Scot.), 27 York Place, Edinburgh, 1.
1930. CALDER, WILLIAM M., M.A., LL.D., F.B.A., Professor of Greek, University of Edinburgh; Editor of *Classical Review*; 58 St Alban's Road, Edinburgh, 9,—*Secretary for Foreign Correspondence*.
- 1919.*CALLANDER, ALEXANDER D., Lellopitiya, Ratnapura, Ceylon.
- 1898.*CALLANDER, J. GRAHAM, LL.D., 11 Osborne Terrace, Edinburgh, 12,—*Director of Museum*.
1929. CALLANDER, WILLIAM A., Writer, Rodona, Kelburn Avenue, Dumbreck, Glasgow.
1931. CAMERON, ARCHIBALD, M.A., Regius Professor of Greek, The University, King's College Aberdeen.
1910. CAMERON, Sir D. Y., R.A., R.S.A., R.S.W., LL.D., Dun Eaglais, Kippen.
1922. CAMERON, Colonel DONALD C., C.B.E., M.A., R.A.S.C., c/o Messrs Cox & Co., 6 Pall Mall, London, S.W. 1.

1930. CAMERON, Rev. JOHN KIRKLAND, The Manse, Auchterhouse, near Dundee.
1931. CAMERON, NEIL, Mayfield, Thornhill Park, Sunderland.
1905. CAMERON-SWAN, Captain DONALD, F.R.A.S., Strathmore, Kalk Bay, Cape Province, South Africa.
1930. CAMPBELL, CHARLES, M.B.E., 46 Rannoch Drive, Bearsden, Dumbartonshire.
1929. CAMPBELL, HUGH RANKIN, Ardfern, 1 Woodburn Road, Newlands, Glasgow.
1933. CAMPBELL, IAIN C. GORDON, F.R.A.I., "Bernero," Malboro' Road, St Albans, Herts.
1930. CAMPBELL, JAMES A., "Glenbank," Dunblane.
- 1925.*CAMPBELL, JOHN DOUGLAS-BOSWELL, 25 Ainslie Place, Edinburgh, 3.
1934. CAMPBELL, Rev. JOHN McCORMACK, Tollcross Park Manse, 94 Drumover Drive, Glasgow, E. 1.
1922. CAMPBELL, JOHN MACLEOD, The Captain of Saddell Castle, Glen Saddell, by Carradale, Argyll.
1922. CAMPBELL, Sheriff JOHN MACMASTER, Rosemount, Campbeltown, Argyll.
1931. CANT, Rev. ALAN, B.D., B.Sc., Manse of Creich, Cupar-Fife.
1901. CARPRAE, GEORGE, 77 George Street, Edinburgh, 2.
1931. CARGILL, Sir JOHN T., Bart., D.L., LL.D., 10 Lowther Terrace, Glasgow.
1906. CARMICHAEL, EVELYN G. M., O.B.E., Barrister-at-Law, Meretown House, Newport, Salop.
1923. CARNEGIE-ABBOTT, Lieut.-Col., Balmahoon, Brechin.
1922. CARRUTHERS, ARTHUR STANLEY, A.C.A., Chartlands, Purley Oaks Road, Sanderstead, Surrey.
1931. CARSWELL, RONALD, L.R.I.B.A., 17 Salisbury Road, Edinburgh, 9.
1932. CARTER, HARTLEY SIDNEY, M.D., D.P.H., Ch.B., Public Health Laboratory, 20 Cochrane Street, Glasgow, C. 1.
- 1933.*CASSILLIS, The Rt. Hon. THE COUNTESS OF, Newhailes, Musselburgh.
1896. CAW, Sir JAMES L., LL.D., 14 Cluny Place, Edinburgh, 10.
1929. CHALMERS, FRANCIS, W.S., 20 Corrennie Gardens, Edinburgh, 10.
1919. CHALMERS, Rev. HENRY REID, 50 Grove Road, West Ferry, Dundee, Angus.
1928. CHAMNEY, WILLIAM, J.P., 15 Elgin Road, Dublin.
1935. CHAPLIN, Mrs WYNDHAM, Seaside Club, 49 Grosvenor Street, London, W. 1.
1934. CHAPMAN, ALAN, M.A., Torsouce, Stow, Midlothian.
1927. CHILDE, Professor V. GORDON, B.Litt., F.S.A., Professor of Archaeology, The University, Edinburgh, 8,—*Secretary for Foreign Correspondence*.
1932. CHRISTIE, Bailie DOUGLAS MORRISON, J.P., "Namur," 8 Dalkeith Road, Dundee.
1901. CHRISTIE, Miss, Cowden Castle, Dollar.
1910. CHRISTISON, JAMES, J.P., F.I.A., Librarian, Public Library, Montrose.
1902. CLARK, ARCHIBALD BROWN, M.A., Emeritus Professor of Political Economy, University of Manitoba, 23 Riselaw Crescent, Edinburgh, 10.
1921. CLARK, WILLIAM FORDYCE, Hillsgarth, Balta Sound, Shetland Isles.
1908. CLAY, ALEXANDER THOMSON, W.S., 18 South Leamonth Gardens, Edinburgh, 4.
1929. CLIFFORD, Mrs ELSIE MARGARET, Chandlers, Witcombe, Glos.
1916. CLOUSTON, ERIC CROSBY TOWNSEND, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Lavenham, Suffolk.
1917. CLOUSTON, J. STORER, O.B.E., Smoogro House, Orphir, Orkney.
- 1922.*CLOUSTON, RONALD GILLAN, L.R.C.P. (Edin.), L.R.C.S. (Edin.), 10 Carrington Street, Glasgow, C. 4.
- 1921.*CLOUSTON, THOMAS HAROLD, O.B.E., Langskaill, 47 Copse Hill, Wimbledon, London, S.W. 20.
1929. CLOW, ANDREW, Solicitor, Alma Villa, Aberfeldy.
1905. CLYDE, The Right Hon. LORD, LL.D., Briglands, Rumbling Bridge, Kinross-shire.
- 1916.*COATES, HENRY, Rydal, Wheatridge Lane, Torquay, died 5th Dec., 1935.
- 1901.*COCHRAN-PATRICK, Lady, Woodside, Beith.
- 1898.*COCHRAN-PATRICK, Sir NEIL J. KENNEDY, K.B.E., J.P., D.L., of Woodside, Advocate, Ladyland, Beith.
1923. COCHRANE, RICHMOND INGLIS, 26 Abercromby Place, Edinburgh, 3.
- 1919.*COCKBURN, Captain ANCHIBALD FREDERICK, R.E. (T.F.), 32 St Andrew Square, Edinburgh, 2.
1929. COCKBURN, Rev. J. HUTCHISON, D.D., The Cathedral Manse, Dunblane.
1935. COCKS, WILLIAM A., The Lilac Cottage, Barnmoor, Ryton-on-Tyne, Co. Durham.
- 1920.*COLLINGWOOD, R. G., M.A., F.S.A., Pembroke College, Oxford.

1929. COLLEUM, Miss V. C. C., Withyfold, Wonham Way, Peaslake, Guildford.
1924. COLT, H. DUNSCOMBE, c/o Farmer's Loan and Trust Co., 15 Cockspur Street, London, S.W. 1.
- 1921.*COLVILLE, Captain NORMAN R., M.C., Penheale Manor, Egloskerry, Cornwall.
1909. COMRIE, JOHN D., M.A., B.Sc., M.D., F.R.C.P.E., Lecturer on the History of Medicine, University of Edinburgh, 25 Manor Place, Edinburgh, 3.
1931. CONACHER, HUGH MORISON, Assistant Secretary, Department of Agriculture for Scotland, 6 Tweed Green, Peebles.
1925. CONACHER, PETER A. T.D., Newtonbank, Forfar.
1932. CONNELL, WILLIAM, 392 Main Street, Rutherglen.
1933. CONNOR, Rev. JOHN M., D.S.O., M.A., C.Fret., 43 Ormonde Avenue, Cathcart.
1918. COOK, DAVIDSON, Highfield, Huddersfield Road, Barnsley, Yorkshire.
1924. COOK, JOHN, W.S., 61 Castle Street, Edinburgh, 2.
1920. CORNELIUS, Rev. WILLIAM J. J., D.Litt., D.C.L., D.D., M.A., B.D., D.Sc., A.K.C., F.R.Hist.S., C.F., etc., All Saints' Vicarage, Sumner Road, North Peckham, London, S.E. 15.
- 1913.*CORRIE, JOHN M., Archæologist to the Royal Commission on Ancient and Historical Monuments of Scotland, 27 York Place, Edinburgh, 1.
- 1920.*CORSAR, KENNETH CHARLES, of Rosely, Rubislaw, 75 Braid Avenue, Edinburgh, 10.
1927. COUPAR, Rev. ROBERT, B.D., D.D., The Manse, Linlithgow.
1918. COUPER, Rev. W. J., M.A., D.D., 26 Circus Drive, Dennistoun, Glasgow.
- 1920.*COWAN, ROBERT CRAIG, Lochside Cottage, Duddingston, Midlothian.
1931. COWE, WILLIAM, Tweelville, Thorburn Road, Cohnnton.
1929. COWIE, ALEXANDER M., M.B., C.M., Glenrinnies, Dufftown, Banffshire.
1929. COWIE, MORTON J. H., A.R.I.B.A., "Durrishdeer," St John's Road, Corstorphine, Edinburgh, 12.
1928. COWIE, THOMAS RENNIE, Ravensleigh, 2 Sydenham Road, Dowanhill, Glasgow, W. 2.
1929. COWLES, FREDERICK I., F.R.S.L., F.R.S.A., Librarian, Swinton and Pendlebury Public Libraries, Elmhurst, Worsley Road, Swinton, Lancs.
- 1893.*COX, ALFRED W., Glendoick, Glencarse, Perthshire.
- 1901.*COX, DOUGLAS II (no address).
1935. CRAIG, JOHN, M.B., Ch.B., M.R.C.P.E., 5 Albany Terrace, Aberdeen.
1932. CRAIG-BROWN, CLIVE, Comely Bank, Selkirk.
1925. CRAIG-BROWN, Brigadier-General E., D.S.O., Cross Roads, Currie, Midlothian.
1928. CRAIGIE, JOHN, Master Mariner, 4 Gill Pier, Westray, Orkney.
1900. CRAN, JOHN, Backhill House, Musselburgh.
1927. CRANSTOUN, Colonel C. J. EDMONDSTOUNE, D.S.O., Corehouse, Lanark.
1922. CRAWFORD, JAMES, 129 Fotheringay Road, Maxwell Park, Glasgow.
1908. CRAWEORD, Rev. THOMAS, B.D., The Elms, Whitehouse Loan, Edinburgh, 10.
- 1901.*CRAWFORD, The Right Hon The Earl of, K.T., LL.D., Balcarres, Colinsburgh, Fife.
1920. CRAWFORD, W. C., Earraid, Lothianburn, Midlothian.
1931. CRICHTON, GEORGE, 6 Duncan Street, Edinburgh, 9.
1932. CRICHTON, Rev. THOMAS SMITH, M.A., 182 Whitehill Street, Dennistoun, Glasgow.
- 1925.*CRICHTON-STUART, The Lord COLUM, M.P., 22 Mansfield Street, London, W. 1.
1919. CROCKETT, THOMAS, M.A., D.Litt., 15 Langside Crescent, Southgate, London, N. 14.
1932. CROOKS, E. E., F.C.I.L., Dundurn, Whitecraigs, Renfrewshire.
1932. CROOKS, WILLIAM M., J.P., Ardmere, Durham Street, Monifieth, Angus.
1932. CROSGROVE, Rev. J. PRINGLE, M.A., Minister of St Colmac's and St Ninian's, The Manse, 32 Marine Place, Rothesay, Bute.
- 1925.*CROSS, A. ROBERTSON, M.C., B.A., LL.B., 11 Kirklee Terrace, Glasgow, W. 2.
1886. CROSS, ROBERT, Gogar Park, Corstorphine, Edinburgh, 12.
1924. CRUICKSHANK, JAMES, Westwood, Bucksburn, Aberdeenshire.
1924. CULLEN, ALEXANDER, F.R.I.B.A., F.S.I., 92 Cadzow Street, Hamilton.
1922. CULLEN, WILLIAM JOHNSTON, 7 Howard Street, Edinburgh, 4.
1932. CUMMING, ALEXANDER, B.A., M.B., Ch.B., F.R.C.S. Edin., 193 Dominion Road, S. 2, Auckland, New Zealand.
1907. CUMMING, ALEXANDER D., Headmaster, Public School, Callander.
1919. CUMMING, ALEXANDER S., M.D., 18 Ainslie Place, Edinburgh, 3.
1927. CUMMING, VICTOR JAMES, 8 Grosvenor Terrace, Glasgow, W. 2.
1934. CUNNINGHAM, JOHN RICHARD, I.C.S. (Retired), Askoull End, Campbeltown, Argyll.
1893. CUNNINGTON, Captain B. HOWARD, 33 Long Street, Devizes, Wiltshire.

1930. CAMERON, REV. JOHN KIRKLAND, The Manse, Auchterhouse, near Dundee.
1931. CAMERON, NEIL, Mayfield, Thornhill Park, Sunderland.
1905. CAMERON-SWAN, Captain DONALD, F.R.A.S., Strathmore, Kalk Bay, Cape Province, South Africa.
1930. CAMPBELL, CHARLES, M.B.E., 46 Rannoch Drive, Bearsden, Dumbartonshire.
1929. CAMPBELL, HUGH RANKIN, Ardfern, I Woodburn Road, Newlands, Glasgow.
1933. CAMPBELL, IAIN C. GORDON, F.R.A.I., "Bernero," Malboro' Road, St Albans, Herts.
1930. CAMPBELL, JAMES A., "Glenbank," Dunblane.
- 1925.*CAMPBELL, JOHN DOUGLAS-BOSWELL, 25 Ainslie Place, Edinburgh, 3.
1934. CAMPBELL, REV. JOHN McCORMACK, Tolleross Park Manse, 94 Drumover Drive, Glasgow, E. 1.
1922. CAMPBELL, JOHN MacLEOD, The Captain of Saddell Castle, Glen Saddell, by Carradale, Argyll.
1922. CAMPBELL, Sheriff JOHN MACMASTER, Rosemount, Campbeltown, Argyll.
1931. CANT, REV. ALAN, B.D., B.Sc., Manse of Creich, Cupar-Fife.
1901. CARFRAE, GEORGE, 77 George Street, Edinburgh, 2.
1931. CARGILL, Sir JOHN T., Bart., D.L., LL.D., 10 Lowther Terrace, Glasgow.
1906. CARMICHAEL, EVELYN G. M., O.B.E., Barrister-at-Law, Meretown House, Newport, Salop.
1923. CARNEY-ABBUTTSOTT, Lieut.-Col., Balnamoon, Brechin.
1922. CARRUTHERS, ARTHUR STANLEY, A.C.A., Chartlands, Purley Oaks Road, Sanderstead, Surrey.
1931. CARSWELL, RONALD, L.R.I.B.A., 17 Salisbury Road, Edinburgh, 9.
1932. CARTER, HARTLEY SIDNEY, M.D., D.P.H., Ch.B., Public Health Laboratory, 20 Cochrane Street, Glasgow, C. 1.
- 1933.*CASSILLIS, The Rt. Hon. THE COUNTESS OF, Newhailes, Musselburgh.
1896. CAW, Sir JAMES L., LL.D., 11 Cluny Place, Edinburgh, 10.
1929. CHALMERS, FRANCIS, W.S., 20 Corrennie Gardens, Edinburgh, 10.
1919. CHALMERS, REV. HENRY REID, 50 Grove Road, West Ferry, Dundee, Angus.
1928. CHAMNEY, WILLIAM, J.P., 15 Elgin Road, Dublin.
1935. CHAPLIN, Mrs WYNDHAM, Seasmie Club, 49 Grosvenor Street, London, W. 1.
1934. CHAPMAN, ALAN, M.A., Torsonce, Stow, Midlothian.
1927. CHILDE, Professor V. GORDON, B.Litt., F.S.A., Professor of Archaeology, The University, Edinburgh, 8,—*Secretary for Foreign Correspondence*.
1932. CHRISTIE, Bailie DOUGLAS MORRISON, J.P., "Namur," 8 Dalkeith Road, Dundee.
1901. CHRISTIE, Miss, Cowden Castle, Dollar.
1910. CHRISTISON, JAMES, J.P., F.L.A., Librarian, Public Library, Montrose.
1902. CLARK, ARCHIBALD BROWN, M.A., Emeritus Professor of Political Economy, University of Manitoba, 23 Riselaw Crescent, Edinburgh, 10.
1921. CLARK, WILLIAM FORDYCE, Hillsgarth, Balta Sound, Shetland Isles.
1908. CLAY, ALEXANDER THOMSON, W.S., 18 South Learmonth Gardens, Edinburgh, 4.
1929. CLIFFORD, Mrs ELSIE MARGARET, Chandlers, Witcombe, Glos.
1916. CLOUSTON, ERIC CROSBY TOWNSEND, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Lavenham, Suffolk.
1917. CLOUSTON, J. STORER, O.B.E., Smooogro House, Orphir, Orkney.
- 1922.*CLOUSTON, RONALD GILLAN, L.R.C.P. (Edin.), L.R.C.S. (Edin.), 10 Carrington Street, Glasgow, C. 4.
- 1921.*CLOUSTON, THOMAS HAROLD, O.B.E., Langskaill, 47 Copse Hill, Wimbledon, London, S.W. 20.
1929. CLOW, ANDREW, Solicitor, Alma Villa, Aberfeldy.
1905. CLYDE, The Right Hon. LORD, LL.D., Briglands, Rumbling Bridge, Kinross-shire.
- 1916.*COATES, HENRY, Rydal, Wheatridge Lane, Torquay, died 5th Dec., 1935.
- 1901.*COCHRAN-PATRICK, Lady, Woolde, Beith.
- 1898.*COCHRAN-PATRICK, Sir NEIL J. KENNEDY, K.B.E., J.P., D.L., of Woodside, Advocate, Ladyland, Beith.
1923. COCHRANE, RICHMOND INGLIS, 26 Abercromby Place, Edinburgh, 3.
- 1919.*COCKBURN, Captain ARCHIBALD FREDERICK, R.E. (T.F.), 32 St Andrew Square, Edinburgh, 2.
1929. COCKBURN, Rev. J. HUTCHISON, D.D., The Cathedral Manse, Dunblane.
1935. COCKS, WILLIAM A., The Lilac Cottage, Barmoor, Ryton-on-Tyne, Co. Durham.
- 1920.*COLLINGWOOD, R. G., M.A., F.S.A., Pembroke College, Oxford.

1929. COLLUM, Miss V. C. C., Withyfold, Wonham Way, Peaslake, Guildford.
1924. COLT, H. DUNSCOMBE, c/o Farmer's Loan and Trust Co., 15 Cockspur Street, London, S.W. 1.
- 1921.*COLVILLE, Captain NORMAN R., M.C., Penheale Manor, Egloskerry, Cornwall.
1909. COMBIE, JOHN D., M.A., B.Sc., M.D., F.R.C.P.E., Lecturer on the History of Medicine, University of Edinburgh, 25 Manor Place, Edinburgh, 3.
1931. CONACHER, HUGH MORISON, Assistant Secretary, Department of Agriculture for Scotland, 6 Tweed Green, Peebles.
1925. CONACHER, PETER A., T.D., Newtonbank, Forfar.
1932. CONNELL, WILLIAM, 392 Main Street, Rutherglen.
1933. CONNOR, Rev. JOHN M., D.S.O., M.A., C.F.ret., 43 Ormonde Avenue, Cathcart.
1918. COOK, DAVIDSON, Highfield, Huddersfield Road, Barnsley, Yorkshire.
1924. COOK, JOHN, W.S., 61 Castle Street, Edinburgh, 2.
1920. CORNELIUS, Rev. WILLIAM J. J., D.Litt., D.C.L., D.D., M.A., B.D., D.Sc., A.K.C., F.R.Hist.S., C.F., etc., All Saints' Vicarage, Sumner Road, North Peckham, London, S.E. 15.
- 1913.*CORRIE, JOHN M., Archæologist to the Royal Commission on Ancient and Historical Monuments of Scotland, 27 York Place, Edinburgh, 1.
- 1920.*CORSAR, KENNETH CHARLES, of Rosely, Rubislaw, 75 Braid Avenue, Edinburgh, 10.
1927. COUPAR, Rev. ROBERT, B.D., D.D., The Manse, Linlithgow.
1918. COUPER, Rev. W. J., M.A., D.D., 26 Circus Drive, Dennistoun, Glasgow.
- 1920.*COWAN, ROBERT CRAIG, Lochside Cottage, Duddingston, Midlothian.
1931. COWE, WILLIAM, Tweedville, Thorburn Road, Colinton.
1929. COWIE, ALEXANDER M., M.B., C.M., Glenrinnies, Dufftown, Banffshire.
1929. COWIE, MORTON J. H., A.R.I.B.A., "Durrishdeer," St John's Road, Corstorphine, Edinburgh, 12.
1928. COWIE, THOMAS RENNIE, Ravensleigh, 2 Sydenham Road, Dowanhill, Glasgow, W. 2.
1929. COWLES, FREDERICK I., F.R.S.L., F.R.S.A., Librarian, Swinton and Pendlebury Public Libraries, Elmhurst, Worsley Road, Swinton, Lancs.
- 1893.*COX, ALFRED W., Glendoick, Glencarse, Perthshire.
- 1901.*COX, DOUGLAS H (no address)
1935. CRAIG, JOHN, M.B., Ch.B., M.R.C.P.E., 5 Albyn Terrace, Aberdeen.
1932. CRAIG-BROWN, CLIVE, Comely Bank, Selkirk.
1925. CRAIG-BROWN, Brigadier-General E., D.S.O., Cross Roads, Currie, Midlothian.
1928. CRAIGIE, JOHN, Master Mariner, 4 Gill Pier, Westray, Orkney.
1900. CRAN, JOHN, Backhill House, Musselburgh.
1927. CRANSTOUN, Colonel C. J. EDMONDSTOUNE, D.S.O., Corehouse, Lanark.
1922. CRAWFORD, JAMES, 129 Fotheringay Road, Maxwell Park, Glasgow.
1908. CRAWFORD, Rev. THOMAS, B.D., The Elms, Whitehouse Loan, Edinburgh, 10.
- 1901.*CRAWFORD, The Right Hon. The Earl of, K.T., LL.D., Balcarres, Colinsburgh, Fife.
1920. CRAWFORD, W. C., Earraid, Lothianburn, Midlothian.
1931. CRICHTON, GEORGE, 6 Duncan Street, Edinburgh, 9.
1932. CRICHTON, Rev. THOMAS SMITH, M.A., 182 Whitehill Street, Dennistoun, Glasgow.
- 1925.*CRICHTON-STUART, The Lord COLUM, M.P., 22 Mansfield Street, London, W. 1.
1919. CROCKETT, THOMAS, M.A., D.Litt., 15 Langside Crescent, Southgate, London, N. 14.
1932. CROOKS, E. E., F.C.I.L., Dundurn, Whitecraigs, Renfrewshire.
1932. CROOKS, WILLIAM M., J.P., Ardmere, Durham Street, Monifieth, Angus.
1932. CROSGROVE, Rev. J. PRINGLE, M.A., Minister of St Colmac's and St Ninian's, The Manse, 32 Marine Place, Rothesay, Bute.
- 1925.*CROSS, A. ROBERTSON, M.C., B.A., LL.B., 11 Kirklee Terrace, Glasgow, W. 2.
1886. CROSS, ROBERT, Gogar Park, Corstorphine, Edinburgh, 12.
1924. CRICKSHANK, JAMES, Westwood, Bucksburn, Aberdeenshire.
1924. CULLEN, ALEXANDER, F.R.I.B.A., F.S.I., 92 Cadzow Street, Hamilton.
1922. CULLEN, WILLIAM JOHNSTON, 7 Howard Street, Edinburgh, 4.
1932. CUMMING, ALEXANDER, B.A., M.B., Ch.B., F.R.C.S.Edin., 193 Dominion Road, S. 2, Auckland, New Zealand.
1907. CUMMING, ALEXANDER D., Headmaster, Public School, Callander.
1919. CUMMING, ALEXANDER S., M.D., 18 Ainslie Place, Edinburgh, 3.
1927. CUMMING, VICTOR JAMES, 8 Grosvenor Terrace, Glasgow, W. 2.
1934. CUNNINGHAM, JOHN RICHARD, I.C.S. (Retired), Askomil End, Campbeltown, Argyll.
1893. CUNNINGTON, Captain B. HOWARD, 33 Long Street, Devizes, Wiltshire.

1922. CUNYNGHAME, EDWIN BLAIR, Broomfield, Moniaive, Dumfriesshire.
- 1893.*CURLE, ALEXANDER O., C.V.O., LL.D., F.S.A., Ormsacre, Barnton Avenue, Davidson's Mains, Edinburgh, 4.—*Librarian*.
1933. CURLE, ALEXANDER TANCRED, Berbera, British Somaliland, via Aden.
- 1889.*CURLE, JAMES, LL.D., F.S.A., Priorwood, Melrose,—*Curator of Museum*.
- 1879.*CURSITER, Major JAMES WALLS, 56 Braid Road, Edinburgh, 10.
1931. DALGETTY, ARTHUR BURNES, M.D., Lossiehall, Liff, Angus.
1924. DALGLEISH, Rev. GEORGE W., M.A., The South Manse, Culsaumond, Inch, Aberdeenshire.
1883. DALRYMPLE, The Hon. Sir HEW H., K.C.V.O., 24 Regent Terrace, Edinburgh, 7.
1925. DALZIEL, Mrs FRANK, Sydney Lodge, Whitehouse Loan, Edinburgh, 10.
1920. DAVIDSON, ALFRED ROBERT, Invernahaven, Abernethy, Perthshire.
1924. DAVIDSON, GEORGE, 8 Thistle Street, Aberdeen.
1925. DAVIDSON, GEORGE M., Architect and Surveyor, 16 King Street, Stirling.
1924. DAVIDSON, HUGH, Braedale, Lanark.
1920. DAVIDSON, JAMES, Treasurer, The Carnegie Trust for the Universities of Scotland, 59 Morningside Park, Edinburgh, 10.
1930. DAVIDSON, Major JAMES MILNE, Lynwood, Ashted, Surrey.
1932. DAVIDSON, J. M., O.B.E., F.C.I.S., 2 Lochview Terrace, Gartoosh, Glasgow.
- 1925.*DAWSON, A. BASHALL, The Vache, Chalfont St Giles, Bucks.
- 1927.*DAWSON, WARREN R., F.R.S.E., F.S.A., 28 Grange Road Barnes, London S.W. 13.
1929. DE BLOQUE, The Ven. OSWALD, Ex-Archdeacon, Ex-R.N.S.C.F., The Rectory, Bishopstoke, Hants.
1934. DE PINTO, RAIMONDO N., 4 Sloan Street, Leith.
1922. DEAS, GEORGE BROWN, Architect and Civil Engineer, Lossiebank, Whitehouse Avenue, Kirkcaldy.
- 1923.*DICKSON, ARTHUR HOPE DRUMMOND (no address).
1934. DICKSON, DOUGLAS STANLEY, LL.B., 8 Clarence Drive, Hyndland, Glasgow.
1923. DICKSON, WALTER, "Lyndoch," Elcho Terrace, Portobello.
1895. DICKSON, WILLIAM K., LL.D., Advocate, 8 Gloucester Place, Edinburgh, 3.
1919. DINWOODIE, JOHN, Deira, Crief.
1910. DIXON, RONALD AUDLEY MARTINEAU, of Thearne, F.R.S.E., F.G.S., F.R.G.S., Thearne Hall, near Beverley, Yorkshire.
1923. DOBBIE, Sir JOSEPH, 10 Learmonth Terrace, Edinburgh, 4.
1925. DOBBIE, Lady, 10 Learmonth Terrace, Edinburgh, 4.
1931. DOBIE, MARRYAT R., Keeper of Manuscripts, National Library of Scotland, 23 Cargil Terrace, Edinburgh, 5.
1931. DOIG, Major WILLIAM HOWIE, C.E., Gordon Street, Elgin.
- 1919.*DONALD, ALEXANDER GRAHAM, M.A., F.F.A., 18 Carlton Terrace, Edinburgh, 7.
1930. DONALD, JOHN, 4 Nelson Street W., Greenock.
1910. DONN, ROBERT, 85 St Andrew's Road, Ipsom, Auckland, S.L. New Zealand.
- 1911.*DOUGLAS, JOHN, 6 St Mary's Grove, Barnes Common, London, S.W. 13.
1913. DOUGLAS, LOUDON M., F.R.S.E., Newpark, Mid-Cadder, Midlothian.
1927. DOUGLAS, Miss MURIEL M. O., M.A., Herons Gate, 40 Eastbury Road, Watford.
1927. DOUGLAS, PERCIVAL HOWARD, Dip. Arch. Aldn., A.R.I.B.A., Herons Gate, 40 Eastbury Road, Watford.
1924. DOUGLAS, Major ROBERT E., 15 Merchiston Avenue, Edinburgh, 10.
1927. DOW, J. GORDON, Solicitor and Joint Town Clerk, Millburn House, Crail, Fife.
1928. DOWSETT, JAMES H. H. MACGREGOR, Box 90, Post Office, Rabaul, Territory of New Guinea.
1929. DRUMMOND, Mrs ANDREW L., Eadie Church Manse, Alva, Stirlingshire.
- 1895.*DRUMMOND-MORAY, Capt. W. H., of Abercauney, Crief.
1930. DUFF-DUNBAR, Mrs KENNETH J., Hempriggs House, Wick.
1902. DUFF-DUNBAR, Mrs L., of Ackergill, Ackergill Tower, Wick, Caithness.
- 1930.*DUMERES, The Right Hon. The Earl of, 17 Queen Anne's Gate, London, S.W.
- 1920.*DUNCAN, ALEXANDER MACLAUCHLAN A.R.I.B.A., Chinese Maritime Customs, Shanghai, China.
1909. DUNCAN, Rev. DAVID, North Esk Manse, Musselburgh.
1917. DUNCAN, DAVID, J.P., Parkview, Balgay Road, Dundee.
1924. DUNCAN, GEORGE, Advocate, 60 Hamilton Place, Aberdeen.
1934. DUNCAN, JAMES, Conservator, Anthropological Museum, Marischal College, Aberdeen, 13 Northfield Place, Aberdeen.

1930. DUNCAN, JOHN J., 118 Greenbank Road, Edinburgh, 10.
1928. DUNCAN, PERCIVAL C., 101/1 Clive Street, Calcutta.
1932. DUNCAN, ROBERT, M.A., 294 Strathmartine Road, Dundee.
1932. DUNDAS, D. J. W., Woodhouselee, Milton Bridge, Midlothian.
1921. DUNDAS, R. H., M.A., Christ Church, Oxford.
1933. DUNLAP, MAURICE P., American Consul, c/o American Consulate, Bergen, Norway.
1923. DUNLOP, Miss, of Sheldhill, Biggar.
1923. DUNLOP, Rev. WILLIAM, M.A., St David's Manse, Buckhaven, Fife.
1927. DURAND, Captain PHILIPPE, Curator of the People's Palace Museum, Glasgow Green Glasgow, S.E., 88 Holmlea Road, Cathcart, Glasgow.
1922. DWELLY, EDWARD, F.S.G., "Greenside," Kenilworth Road, Fleet, Hants.
1924. EADES, GEORGE E., M.A., L.C.P., Bon Accord, 209 Peckham Rye, London, S.E. 15.
1927. EASTERBROOK, ARTHUR BLAKE, Balnagowan, Murrayfield Drive, Edinburgh, 12.
1913. EDGAR, Rev. WILLIAM, B.A., B.D., Ph.D., Kinning Park Manse, 10 Maxwell Drive, Pollokshields, Glasgow, S. 1.
1909. EDINGTON, Colonel GEORGE HENRY, T.D., D.L., M.D., D.Sc., F.F.P.S., 20 Woodside Place, Glasgow, C. 3.
1921. EDWARDS, ARTHUR J. H., Assistant Keeper, National Museum of Antiquities, 52 Strathearn Road, Edinburgh, 10.
- 1892.*EDWARDS, JOHN, LL.D., F.R.S.E., 4 Great Western Terrace, Glasgow.
1904. EELES, FRANCIS CAROLUS, F.R.Hist.S., 43 Millbank, London, S.W. 1.
1929. EGERTON, Major-General GRANVILLE G. A., C.B., 7 Inverleith Place, Edinburgh, 4.
1921. EGGLETON, JAMES, Director of Kelvingrove Art Galleries and Museum, Camphill House, Queen's Park, Glasgow, S.
- 1923.*ELPHINSTONE, The Right Hon. LORD, K.T., LL.D., Carberry Tower, Musselburgh.
1932. EWEN, JOHN TAYLOR, O.B.E., B.Sc., F.R.S.E., Pitscandly, Forfar.
1930. EWING, W. TURNER, D.S.O., 18 Lennox Street, Edinburgh, 4.
1929. EYLES, VICTOR AMBROSE, c/o Geological Survey and Museum, 19 Grange Terrace, Edinburgh, 9.
1925. EYRE-TODD, GEORGE, J.P., Auchendarich, by Balloch.
1926. FAIRBAIRN, ARCHIBALD, Wellwood, Muirkirk, Ayrshire.
1923. FAIRLIE, REGINALD F., R.S.A., Architect 7, Ainslie Place, Edinburgh, 3.
1912. FAIRWEATHER, Sir WALLACE, D.L., J.P., Mearns Castle, Renfrewshire.
1921. FARMER, HENRY GEORGE, M.A., Ph.D., M.R.A.S., Stirling Drive, Bearsden.
1922. FAVELL, RICHARD VERNON, M.R.C.S., L.R.C.P., Penberth, St Buryan, S O., Cornwall.
1935. FENTON, WILLIAM, 5 Meethill, Alyth, Perthshire.
1926. FERGUSON, FREDERICK SUTHERLAND, The Homestead, Avenue Road, Southgate, London, N. 14.
1928. FERGUSON, FREDERICK ANERLEY, Duncraig, Castle Street, Brechin.
1930. FERGUSON, HARRY SCOTT, W.S., Linden, West Park Road, Dundee.
1932. FERGUSON, Professor J. DE LANCEY, M.A., Ph.D., Acting Professor of English, Western Reserve University, 2316 South Overlook Road, Cleveland, Ohio, U.S.A.
- 1933.*FERGUSON-WATSON, HUGH, Ph.D., M.D., D.P.H., F.R.F.P.S., 5 Hill-side Street, Edinburgh, 7.
- 1899.*FINDLAY, JAMES LESLIE, Architect, 10 Eton Terrace, Edinburgh, 4.
1921. FINLAYSON, Rev. WILLIAM HENRY, The Rectory Framingham Pigot, Norwich.
- 1925.*FISH, THOMAS WILSON, J.P., M.Inst.N.A., Kirklands, Dunbar.
- 1922.*FLEMING, JOHN ARNOLD, Locksley, Helensburgh.
1928. FLETT, JAMES, A.I.A.A., Hillhead, Bankend Road, Dumfries.
1926. FLOOD, Rev. P. J., D.D. (no address.)
1935. FORBES, DONALD J., M.B., Ch.B., Medical Superintendent, Craigmill House, Strathmartine, by Dundee.
1931. FORDYCE, WILLIAM, M.D., F.R.C.P.E., 17 Walker Street, Edinburgh, 3.
- 1906.*FOULKES-ROBERTS, ARTHUR, Westwood, Goring-on-Thames.
1923. FRANKLYN, CHARLES A. H., M.D. (Laus.), M.B., B.S. (Lond.), M.A. (Ill.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), F.R.S.Medicine, Membre de la Société Suisse d'Héraldique, The Corner House, 31 Queensway, Wragby Road, Lincoln.
1934. FRASER, ALASDAIR, M.A., Raonmôr, Achiltibuie, 20 Gladstone Avenue, Dingwall, Garve, Ross-shire.
1933. FRASER, CHARLES IAN, M.A. (Oxon.), of Reelig, Reelig House, Kirkhill, Inverness-shire.
1932. FRASER, Rev. EWEN, Urray East Manse, Muir of Ord, Ross-shire.
1921. FRASER, GEORGE MACKAY, Solicitor and Banker, Summerlea House, Portree, Skye.

1926. FRASER, HARRY D., M.A., The Schoolhouse, Chirnside, Berwickshire.
1926. FRASER, JOHN, M.C., M.D., F.R.C.S.E., Regius Professor of Clinical Surgery, University of Edinburgh, 32 Moray Place, Edinburgh, 3.
1917. FRASER, WILLIAM, 212 Causewayside, Edinburgh, 9.
1930. FROST, JOHN MAURICE, Aldersyde, Broomhill Road, Aberdeen.
1922. FYFE, WILLIAM, 139 Guildford Road, Portsmouth.
1930. GAIR, G. ROBERT, Nairne Lodge, Duddingston.
1929. GALBRAITH, Dr J. J., 4 Park Street, Dingwall.
1924. GALLOWAY, A. R., O.B.E., M.A., M.B., C.M., 29 Queen's Road, Aberdeen.
1933. GALLOWAY, JAMES L., F.S.M.C., F.I.O., "Coila," Cunnock, Ayrshire.
- 1920.*GALLOWAY, THOMAS L., Advocate, Auchendrane, by Ayt.
1918. GARDEN, WILLIAM, Advocate in Aberdeen, 4 Rubislaw Terrace, Aberdeen.
1925. GARDNER, GEORGE, M.C., The Kibble House, Greenock Road, Paisley.
- 1926.*GARDNER, JOHN C., B.L., Ph.D., Solicitor, Cardowan, Stonehaven.
1921. GARDNER, WILLOUGHBY, F.S.A., Y Berlfa, Deganwy, North Wales.
1923. GARRETT, MATTHEW LAURIE, 1 Wester Coates Gardens, Edinburgh, 12.
1919. GASS, JOHN, M.A., Olig, Carlisle, Lanarkshire.
1926. GAULD, H. DRUMMOND, Allandale, Saughton Road, Corstorphine, Edinburgh, 12.
1911. GAWTHORP, WALTER E., 18 Dornton Road, South Croydon.
1935. GENTLES, JOHN, Architect, 1 Wilson Street, Cliftonville, Coatbridge.
- 1930.*GIBB, Sir ALEXANDER, G.B.E., C.B., Queen Anne's Lodge, Westminster, London, S.W. 1.
1923. GIBB, JOHN TAYLOR, High Street, Mauchline, Ayrshire.
1923. GIBSON, ANDREW, J.P., M.B., F.R.C.S. (Edin.), St Brannans, Bailieston, near Glasgow.
1912. GIBSON, JOHN, c/o The British Linen Bank, Glasgow.
1920. GIBSON, JOHN, F.S.A., F.C.S., Hallgarth House, Hexham, Northumberland.
1933. GIBSON, W. J., C.B.E., 15 Plewlands Avenue, Edinburgh.
1922. GILLESPIE, JOHN, L.R.I.B.A., F.R.S.A., 56 Kenmure Street, Pollokshields, Glasgow.
1924. GILLIES, Rev. WILLIAM A., B.D., The Manse, Kenmore, Perthshire.
1932. GILLON, Rev. ALEXANDER, Minister of St Munn's, The Manse, Kilmun, Argyll.
1924. GILLON, STAIR AGNEW, Advocate, Solicitor of Inland Revenue, Pitliver, Dunfermline, Fife.
1926. GILMOUR, JOHN, 24 Kingsacre Road, King's Park, Glasgow, S. 4.
1883. GILMOUR, Brigadier-General Sir ROBERT Bt., C.B., C.V.O., D.S.O., of Craigmillar, The Inch, Liberton, Edinburgh, 9.
1922. GILRUTH, JAMES DAVIE, M.A., M.D., F.R.C.P.Ed., Drummekno, 25 Frogston Road, Edinburgh, 10.
1922. GIRVAN, RITCHIE, M.A., University Lecturer, Ekadasha, Eglinton Drive, Glasgow, W. 2.
- 1912.*GLADSTONE, HUGH S., M.A., F.R.S.E., Capenoch, Thornhill, Dumfriesshire.
1930. GLOVER, Rev. JAMES ANDERSON, Murrayfield Manse, Bannockburn.
1933. GOLDSMITH, Miss ELIZABETH, M.A.(Hons.), 14 West Holmes Gardens, Musselburgh.
1921. GORDON, Rev. JAMES BRYCE, The Manse, Oldhamstocks, Cockburnspath.
1927. GOURLAY, WILLIAM ROBERT, C.S.I., C.I.E., Kenbank, Dalry, Kirkcudbrightshire.
- 1913.*GRAHAM, ANGUS, M.A., F.E., Secretary, Royal Commission on Ancient and Historical Monuments of Scotland, 27 York Place, Edinburgh, 1.
1933. GRAHAM, FRANCIS B., Solicitor, 61 Reform Street, Dundee.
1917. GRAHAM, JAMES GERARD, Captain, 4th Battalion The Highland Light Infantry, Quinta do Alvor, 147 Rua Azevedo, Coutinho, Oporto, Portugal.
1920. GRAHAM, JAMES MAXTONE, C.A., 14 Randolph Crescent, Edinburgh, 3.
1924. GRAHAME, Lieut.-Col GEORGE CAMPBELL, of Over Glenly, Ingleholm, North Berwick.
1888. GRANT, Sir FRANCIS J., K.C.V.O., LL.D., W.S., *Lord Lyon King of Arms*, H.M. General Register House, Edinburgh, 2,—*Vice-President*.
1928. GRANT, Miss I. F., 4 Royal Circus, Edinburgh, 3.
1929. GRANT, JOHN, Civil Servant, "Lochnagar," 35 Groathill Avenue, Craigleith, Edinburgh, 4.
1930. GRANT, WALTER G., of Trumland, Hillhead, Kirkwall, Orkney.
1931. GRANT, WILLIAM AENEAS, Alpha Cottage, Union Street, Kirkintilloch.
1933. GRAY, JAMES DOW, J.P., "Ballochnyle," Strathmore Avenue, Dundee, Angus.
1915. GRAY, WILLIAM FORBES, F.R.S.E., 8 Mansion-house Road, Edinburgh, 9.

1927. GREIG, FRANCIS, Lindean, Barony Terrace, Corstorphine, Edinburgh, 12.
1928. GREIG, WILLIAM MACRIE, "Orphir," 9 Ashgrove Road West, Aberdeen.
1922. GRIEVE, JAMES, 54 Terregles Avenue, Pollokshields, Glasgow, S. 1.
1922. GRIEVE, WILLIAM GRANT, 10 Queensferry Street, Edinburgh, 2.
1920. GUILD, JAMES HARROWER, W.S., 5 Coates Gardens, Edinburgh, 12.
1931. GUNN, JOHN, M.A., D.Sc., F.R.S.G.S., 62 Blacket Place, Edinburgh, 9.
- 1934.*GUNN, SCOTT, Tynedale Hydropathic, Hexham, Northumberland.
1911. GUNSON, Rev. ERNEST SHERWOOD, M.A., The Manse of New Monkland, by Airdrie.
- 1907.*GUTHRIE, CHARLES, W.S., 3 Charlotte Square, Edinburgh, 2.
1927. GUTHRIE, DOUGLAS, M.D., F.R.C.S., 4 Rothesay Place, Edinburgh, 3.
1924. GUTHRIE, Miss HELEN LINGARD, Carnoustie House, Carnoustie.
1905. GUTHRIE, THOMAS MAULF, Solicitor, Royal Bank of Scotland, Brechin.
1930. GUY, JOHN, M.A., 85 Waverley Street, Greenock.
- 1933.*HAGGART, Provost JAMES DEWAR, O.B.E., J.P., Eilean Riahbach, Aberfeldy, Perthshire.
1933. HALCROW, THOMAS S. G., of Uitenhage, South Africa.
1921. HALL, Mrs J. MACALISTER, of Killean, Killean House, Tayinloan, Argyll.
1929. HALLIDAY, THOMAS MATHIESON, c/o Messrs Barton & Sons, 11 Forrest Road, Edinburgh, 1.
1928. HAMILTON, Miss DOROTHEA E., 48 India Street, Edinburgh, 3.
1925. HAMILTON, JAMES, J.P., 5 Leefield Drive, Netherlee, Glasgow, S. 4.
- 1922.*HAMILTON, JOHN, Punta Loyola, Patagonia, South America.
1933. HAMILTON, Sir ROBERT W., Knt., F.R.G.S., 161 Oakwood Court, London, W. 14.
- 1901.*HAMILTON OF DALZELL, The Right Hon. LOR. K.T., C.V.O., Dalzell, Motherwell.
1919. HANNA, Miss CHALMERS, Dalnaspagh, Killiecrankie, Perthshire.
- 1925.*HANNA, WILLIAM GEMMILL CHALMERS, O.B.E., C.A., 6 Lennox Street, Edinburgh, 4.
1922. HANNAH, HUGH, Solicitor, 6 St Bernard's Crescent, Edinburgh, 4.
1926. HANNAH, IAN C., M.A., M.P., F.S.A., The Whim, Lamancha, Peeblesshire.
1911. HANNAN, Rev. Canon THOMAS, M.A., The Rectory, Links Place, Musselburgh.
1912. HANNAY, ROBERT KERR, LL.D., H.R.S.A., H.M. Historiographer in Scotland, Fraser Professor of Scottish History, University of Edinburgh, 5 Royal Terrace, Edinburgh, 7.
1924. HARDING, WILLIAM, F.Z.S., F.R.G.S., Royal Societies Club, St James's Street, London, S.W. 1.
1920. HARDING, WILLIAM GERALD, F.R.S.E., M.R.S.L., F.R.Hist.S., F.L.S., Peckwater House, Charing, Kent.
- 1903.*HARRIS, WALTER B., Marlborough Club, Pall Mall, London, S.W. 1.
- 1927.*HARRISON, EDWARD S., The Bield, Elgin.
1933. HARRISON, JAMES, M.D., J.P., Howard Street, North Shields, Northumberland.
1905. HARVEY, WILLIAM, J.P., Nethercrag, 71 Blackness Avenue, Dundee.
1922. HAY, ALEXANDER MACKENZIE, Editor of *The Statist*, 51 Cannon Street, London, E.C.
1927. HAY, Major MALCOLM V., Seaton, Old Aberdeen.
1922. HAYCRAFT, FRANK W., "Evershot," Haynes Park, near Bedford.
1934. HEATH, Rev. ALBAN, The Mansion, Brooks Hill, Harrow Weald Park, Middlesex.
1935. HELMAN, HAROLD, "Dil-Kushi," Plomer Hill, High Wycombe, Bucks.
1924. HEMP, WILFRID J., F.S.A., Secretary, Ancient Monuments Commission for Wales and Monmouthshire, 20 Great Smith Street, Westminster, London, S.W. 1.
- 1927.*HENCKEN, HUGH O'NEILL, 100 Beacon Street, Boston, Mass., U.S.A.
1902. HENDERSON, ADAM, B.Litt., University Library, Glasgow, W. 2.
1928. HENDERSON, ALLAN MACFARLANE, W.S., 23 Grosvenor Street, Edinburgh, 12.
1930. HENDERSON, Miss DOROTHY M., Kilchoan, Kilmelford, Argyll.
1928. HENDERSON, Rev. GEORGE D., B.D., D.Litt., D.D., Professor of Church History in the University of Aberdeen, 41 College Bounds, Aberdeen.
- 1889.*HENDERSON, JAMES STEWART, 1 Pond Street, Hampstead, London, N.W. 3.
1934. HENDERSON, Mrs MABLE DAISY, 33 Seymour Street, Carnoustie, Angus.
1927. HENDERSON, Miss SYBIL HORN, Turfhill, Kinross.
1926. HENDERSON, THOMAS, C.B.E., J.P., Actuary of The Savings Bank of Glasgow, 5 Belmont Crescent, Glasgow, W. 2.
1931. HENDERSON, WILLIAM, M.A., 66 Baird Drive, Saughtonhall, Edinburgh, 12.

1920. HEPBURN, W. WATT, 23 Beechgrove Terrace, Aberdeen.
1891. HERRIES, Lieut.-Colonel WILLIAM D., of Spottes, Spottes Hall, Dalbeattie.
1887. HEWISON, Rev. J. KING, M.A., D.D., Kingsmede, Thornhill, Dumfriesshire.
1929. HEWISON, JOHN REID, Pierowall, Westray, Orkney.
1934. HILLEARY, IAIN ROBERTSON, The Lodge, Edinbane, Isle of Skye.
1926. HOGARTH, JAMES, 7 Carlton Terrace, Edinburgh, 7.
1923. HOILE, HENRY JOHN, M.A., M.B., Ch.B., 145 High Street, Montrose.
- 1909.*HOLMS, JOHN A., Formakin, Bishopston, Renfrewshire.
1925. HOME, The Right Hon. The Earl of, K.T., LL.D., The Hirsell, Coldstream.
1914. HOME, GORDON C., Major, R.A.S.C. Foxbury, Hambleton, Surrey.
1926. HOOD, Mrs VIOLET M., Midfield, Lasswade.
1928. HOPE, Rev. LESLIE P., M.A., Ph.D., 9 Bute Mansions, Hillhead Street, Glasgow, W. 2.
1927. HOPKIRK, Rev. DUDLEY STUART, M.A., B.D., B Litt. (Oxon.), 18 Regent Terrace, Edinburgh, 7.
1933. HORN, WILLIAM, 27 Comiston Drive, Edinburgh, 10.
1932. HOTCHKIS, Mrs PENELOPE, Mid-Dykebar, Paisley.
1927. HOULT, JAMES, F.R.Hist.S., 12 Brookland Road, Stoneycroft, Liverpool.
1928. HOUSTON, KEYWORTH E., F.R.G.S., St Bernard's, The Ridgeway, Rothley, Leicester.
1932. HOW, Commander GEORGE EVELYN PAGET, Royal Navy (Rtd.), 13 Berkeley Square, London, W. 1.
- 1925.*HOWARD DE WALDEN, The Right Hon. LORD, Seaford House, London, S.W. 1.
- 1889.*HOWDEN, CHARLES R. A., Advocate, Sheriff-Substitute of Inverness, Elgin, and Nairn, Sheriff Court, Elgin.
1886. HOWDEN, JOHN M., C.A., 11 Eton Terrace, Edinburgh, 4.
1929. HOWELL, Rev. ALEXANDER R., M.A., Minister of Paisley Abbey, The Abbey House, Castlehead, Paisley.
- 1930.*HUME, Lieut.-Col. EDGAR ERSKINE, M.C., U.S. Army, B.A., M.A., M.D., LL.D., D.Litt., Dr. P.H., D.T.M., Sc.D., The Magnolias, Frankfort, Kentucky.
1910. HUNTER, ANDREW, 48 Garscube Terrace, Murrayfield, Edinburgh, 12.
1927. HUNTER, JOHN, Auchencroch, by Breechin, Angus.
1932. HUNTER, ROBERT LESLIE, Newlands House, Polmont, Stirlingshire.
- 1921.*HUNTER, THOMAS DUNCAN, J.P., 11 Gloucester Place, Edinburgh, 3.
1912. HYSLOP, ROBERT, F.R.Hist.S., Field House, Hylton, Sunderland, Co. Durham.
1908. INGLIS, ALAN, Art Master, Arbroath High School, 4 Osborne Terrace, Millgate Loan, Arbroath.
1904. INGLIS, FRANCIS CAIRD, Rock House, Caltoun Hill, Edinburgh, 7.
- 1911.*INGLIS, HARRY R. G., 10 Dick Place, Edinburgh, 9.
- 1906.*INGLIS, JOHN A., King's and Lord Treasurer's Remembrancer, 13 Randolph Crescent, Edinburgh, 3.
1928. INGLIS, JOHN A., B.Sc., The Schoolhouse, Kyle Rhea, Isle of Skye, by Kyle of Lochalsh.
1933. INGRAM, W. K.C., 61 Great King Street, Edinburgh, 3.
1920. INNES, THOMAS, of Learney and Kinnairdy, *Albany Herald*, 35 Inverleith Row, Edinburgh, 4.
1933. IRVINE, MAGNUS, 2 Greenhill Gardens, Edinburgh, 10.
1923. IRVINE, QUENTIN H. I., Barra Castle, Oldmeldrum, Aberdeenshire.
1932. JACK, JAMES, F.L.S., 27 Ponderlaw Street, Arbroath.
1913. JACKSON, GEORGE ERSKINE, O.B.E., M.C., W.S., 26 Rutland Square, Edinburgh, 1.
1923. JACKSON, STEWART DOUGLAS, 73 West George Street, Glasgow.
1918. JAMIESON, JAMES H., 14 Sciennes Gardens, Edinburgh, 9.
- 1923.*JAMIESON, JOHN BOYD, M.D., F.R.C.S.E., 43 George Square, Edinburgh, 8.
1922. JEHU, THOMAS JOHN, M.A., M.D., Professor of Geology, University of Edinburgh, 35 Great King Street, Edinburgh, 3.
- 1916.*JOHNSON, JOHN BOLAM, C.A., 12 Granby Road, Edinburgh, 9,—*Treasurer*.
- 1902.*JOHNSTON, ALFRED WINTLE, Architect, 30 Goldins Green, Welwyn Garden City, Herts.
1907. JOHNSTON, Sir WILLIAM CAMPBELL, LL.D., W.S., Deputy-Keeper of His Majesty's Signet, 19 Walker Street, Edinburgh, 3.
1892. JOHNSTONE, HENRY, M.A. (Oxon.), 69 Northumberland Street, Edinburgh, 3.
1934. JOHNSTONE, Rev. SAMUEL MARTIN, M.A., F.R.H.S., St John's Rectory, Parramatta, New South Wales, Australia.

1931. JONES, DONALD HERBERT, 20 Glen Road, Neath, Glam.
1930. JONES, Mrs ENID POOLE, Glyn, West Kilbride, Ayrshire.
1928. JONES, H. R., c/o The Chartered Bank of India, Australia, and China, 38 Bishopsgate, London, E.C. 3.
1917. KATER, ROBERT M'CULLOCH, Coniston, Glasgow Road, Kilnarnock.
1910. KAY, ARTHUR, H.R.S.A., J.P., F.S.A., 11 Regent Terrace, Edinburgh, 7.
1929. KAY, JAMES CUNNINGHAM, Highway Engineer, Grove Cottage, Stow, Midlothian.
- 1922.*KEILLER, ALEXANDER, of Morven, Ballater, Aberdeenshire.
1928. KEILLER, Mrs VERONICA M., F.R.A.I., The International Sportsmen's Club, Upper Grosvenor Street, London, W. 1.
1911. KENNEDY, ALEXANDER, Kenuall House, Hamilton Drive, Bothwell.
1911. KENNEDY, ALEXANDER BURGESS, 1 Randolph Place, Edinburgh, 3.
1924. KENNEDY, JOHN, Hilton Hall, Prestwick, Lanes.
1930. KENNEDY, PETER, M.A., 20 Northfield Terrace, Edinburgh, 8.
1928. KENNEDY, WILLIAM DOW, M.A., Director of Education (Banffshire), Earlsmount, Keith.
1907. KENT, BENJAMIN WILLIAM JOHN, Tatefield Hall, Beckwithshaw, Harrogate.
1910. KER, CHARLES, M.A., C.A., 8 Montgomerie Crescent, Glasgow, W. 2.
1929. KERR, Rev. ALEXANDER FLEMING, Ph.D., Minister of Kinkell and Madderty, High Manse, Madderty, Crieff.
1896. KERR, HENRY F., A.R.I.B.A., 16 Duke Street, Edinburgh, 1.
1927. KERR, ROBERT, M.A., Keeper of the Art and Ethnographical Departments, Royal Scottish Museum, 34 Wardie Road, Edinburgh, 5,—*Curator of Coins*.
1920. KERR, WALTER HUME, M.A., B.Sc., F.R.S.E., Glenfriars, Jedburgh, Roxburghshire.
- 1911.*KETCHEN, W. T., W.S., 1 Jeffrey Avenue, Blackhall, Edinburgh, 4.
1932. KILBRIDE-JONES, HOWARD EDWARD, Barbizon, Lasswade Road, Liberton, Edinburgh, 9.
- 1912.*KING, CHARLES, F.S.Sc. Lond., F.C.S., 21 Newton Place Glasgow
1926. KING, Mrs ELIZA MARGARET, of Arntomy, Port of Menteith, Perthshire.
- 1912.*KING, Sir JOHN WESTALL, Bt., 3 Prince's Gardens, London, S.W. 7.
1926. KINNEAR, WILLIAM FRASER ANDERSON, Colebrooke, Kersland Drive, Milngavie.
1930. KIRK, ROBERT, M.B., Ch.B., B.Sc., Sudan Medical Service, Khartoum, The Sudan.
1932. KIRK, Rev. ROBERT LEE, The Manse, Kirkgunzeon, Dumfries.
1919. KIRKNESS, WILLIAM, c/o Gunn, 250 Dalry Road, Edinburgh, 11.
1896. KIRKPATRICK, JOHN G., W.S., 2 Belford Park, Edinburgh, 4.
1927. KIRKWOOD, JAMES, Beltrees, Dunchurch Road, Oldhall, near Paisley.
1922. KNEEN, Miss F. BEATRICE, Ballamoar House, Ballaugh, Isle of Man.
1928. KNIGHT, Rev. G. A. FRANK, M.A., D.D., F.R.S.E., 10 Hillhead Street, Glasgow, W. 2.
1906. KNOWLES, Captain WILLIAM HENRY, F.S.A., Chesfield, Abbey Road Malvern.
- 1924.*KNOX, WILLIAM BARR, Ryefield, Dalry, Ayrshire.
1922. LACAILLE, ARMAND D. (Archæologist, Wellcome Historical Medical Museum), 2 Pasture Road, North Wembley, Middlesex.
- 1910.*LAIDLER, PERCY WARD, Medical Officer of Health, City Hall, East London, C.P., South Africa.
1920. LAMR, ERNEST H., M.A. (Hons.) Edin., Rector of Lanark Grammar School, The Rectory, Lanark.
1923. LAMB, Rev. GEORGE, B.D., Beechwood, Melrose.
1929. LAMONT, JOHN M., O.B.E., LL.D., J.P., Clerk of Lieutenancy and Vice-Convener of Bute-shire, etc., Ardentigh, Port Bannatyne, Bute.
- 1901.*LAMONT, Sir NORMAN, Bt., M.P., of Knockdow, Toward, Argyllshire.
1932. LANG, The Right Rev. MARSHALL, B., T.D., D.D., Whittinghame Manse, Haddington.
1932. LARG, ROBERT JAMES, J.P., "The Hollies," 63 Clepington Road, Maryfield, Dundee.
1931. LAURIE, WILLIAM CAMPBELL, 2 Harefield Avenue, Dundee.
1930. LAWSON, W. B., 26 Roseburn Street, Edinburgh, 12.
1934. LEACH, Dr WILLIAM JOHN, Eileandonan, Beauly.
- 1910.*LEIGH Colonel JAMES HAMILTON, Shenley Cottage, Bagborough, Taunton, Somerset.
1926. LEITCH, JAMES, Crawriggs, Kirkintilloch Road, Lenzie.
1933. LEITCH, P. A., Assoc.M.Inst.C.E., 4 Silverwells Crescent, Bothwell, Lanarkshire.
1925. LESLIE, Sheriff JOHN DEAN, 16 Victoria Place, Stirling.

1935. LESSELLS, JAY, D.A.Edin., L.I.F.A.Lond., Surma, West Kilbride, Ayrshire.
- 1902.*LEVESON-GOWER, F. S., Travellers' Club, Pall Mall, London.
1927. LIDDELL, BUCKHAM W., W.S., Union Bank House, Pitlochry.
1927. LIDDELL, Miss DOROTHY MARY, The Old Rectory, Stratfield, Turgis, Basingstoke, Hants.
1928. LIGHTBODY, JOHN, Solicitor, Oatlands, Lanark.
- 1919.*LINDSAY, Mrs BROWN, of Colstoun, 51 Cadogan Place, London, S.W. 1.
1927. LINDSAY, IAN GORDON, 56 Castle Street, Edinburgh, 2.
1890. LINDSAY, LEONARD C. C., 15 Morpeth Mansions, London, S.W. 1.
1935. LINDSAY, PHILIP, 14A Priory Road, London, N.W. 6.; 25 Church Square, Rye, Sussex.
1925. LING, ARTHUR, 28 Kinross Avenue, Cardonald, Glasgow, S.W. 2.
1920. LINLITHGOW, The Most Hon. The Marquess of, P.C., K.T., G.C.I.E., Hopetoun House, South Queensferry.
1921. LINTON, ANDREW, B.Sc., Gilmanscleuch, Selkirk.
1925. LITTLE, JOHN R., 5 Dalrymple Crescent, Edinburgh, 9.
- 1881.*LITTLE, ROBERT, R.W.S., The Cottage, Hackenden, East Grinstead.
1924. LOCH, Lt.-Colonel PERCY GORDON, C.I.E., Indian Army, Bahrain, Persian Gulf.
1915. LOCKHART, JOHN Y., 12 Victoria Gardens, Kirkealdy.
- 1901.*LONEY, JOHN W. M., 6 Carlton Street, Edinburgh, 4.
1917. LOVE, WILLIAM HENDERSON, J.P., M.A., A.Mus., Rowanbank, Craigendoran, Helensburgh.
1926. LOW, ALEXANDER, M.A., M.D., Professor of Anatomy in the University of Aberdeen, 144 Blenheim Place, Aberdeen.
1924. LUMSDEN, HARRY, M.A., LL.B., LL.D., J.P., 105 West George Street, Glasgow, C. 2.
1934. LUMSDEN, JAMES, 130 Blenheim Place, Aberdeen.
1935. LYLE, WILLIAM, Braih na Bruaich, 57 Lantine Road, Paisley.
1892. MACADAM, JOSEPH H., Aldborough Hall, Aldborough Hatch, near Ilford, Essex.
1932. MACARTHUR, Rev. GEORGE W., M.A., 5 Cranworth Street, Glasgow, W. 2.
- 1927.*MACAULAY, JAMES, F.S.I., F.F.S., M.T.P.I., 37 St Vincent Crescent, Glasgow, C. 3.
- 1929.*MACAULAY, JOHN DRUMMOND, Bank Agent, 7 Greenlaw Avenue, Paisley.
- 1928.*MACAULAY, THOMAS BASSETT, LL.D., President, Sun Life Assurance Co. of Canada, Montreal, Canada.
1935. M'BRIDE, DANIEL, B.L., Sheriff Clerk of Dumbartonshire, County Buildings, Dumbarton.
1926. M'BAIN, J., Waterloo, Ayr.
1932. M'CABE, JAMES OSBORNE, B.A., M.A., 20 Eastercraigs Road, Dennistoun, Glasgow.
1926. M'CASKILL, JOHN, J.P., Estate Office, Gairloch, Ross-shire.
1928. M'CLYMONT, Rev. J. DOUGLAS, M.A., B.D., The Manse of Old Cumnock, Cumnock, Ayrshire.
1930. MACCOLL, HUGH GEOFFREY, M.A., B.Sc., Craigharranoch, Ballachulish, Argyll.
1930. MACCOLL, WILLIAM DUGALD, BM/WDMC, London, W.C. 1.
1915. M'CORMICK, ANDREW, 66 Victoria Street, Newton-Stewart.
1924. M'CORMICK, JOHN, 67 Queenshill Street, Springburn, Glasgow.
1925. MACCORQUODALE, HUGH, Inverlochty, Tweedsmuir Road, Crookston, Glasgow.
- 1924.*M'COSH, JAMES, Solicitor, Pitcon, Dalry, Ayrshire.
- 1925.*MACCOWAN, Rev. RODERICK, Free Church Manse, Kiltarlity, Inverness-shire.
1929. M'CRAE, THOMAS, F.R.I.A.S., 6 N.E. Circus Place, Edinburgh, 3.
1926. MACDONALD, DONALD SOMERLED, W.S., 1 Hill Street, Edinburgh, 2.
- 1900.*MACDONALD, Sir GEORGE, K.C.B., M.A., LL.D., D.Litt., F.B.A., H.R.S.A., 17 Learmonth Gardens, Edinburgh, 4.—President.
1929. MACDONALD, HENRY LACHLAN, of Dunach, Dunach, Oban, Argyll.
1929. MACDONALD, JAMES H., M.B., Medical Superintendent, "Howford House," Crookston, Glasgow, S.W. 2.
1923. MACDONALD, Miss JANE C. C., Ballintuin House, Blairgowrie.
1930. MACDONALD, WILLIAM, Inspector of Poor, Craigmare, Croyard Road, Beaulieu.
1932. M'DOUGALL, W. LUDLAW, Sumburgh, Shetland.
- 1872.*M'DOWALL, THOMAS W., M.D., Burwood, Wadhurst, Sussex.
1928. MACECHEN, Rev. C. VICTOR A., M.A., 8 Salisbury Terrace, Aberdeen.
1908. M'ELNEV, Rev. ROBERT, M.A., The Manse, Downpatrick, County Down.
1926. M'ERLICH, RODERICK, Factor, Lochmaddy, North Uist.
1935. MACFARLANE, Captain JOHN, "Selma," 34 Derby Street, Vaucluse, Sydney, Australia.

- 1898.*MACGILLIVRAY, ANGUS, C.M., M.D., D.Sc., 23 South Tay Street, Dundee.
1935. MACGILLIVRAY, Rev. WILLIAM, West Manse, Cairnie, Huntly, Aberdeenshire.
- 1901.*MACGREGOR, ALASDAIR R., of Macgregor, Cardney, Dunkeld.
1918. MACGREGOR, Rev. WILLIAM CUNNINGHAM, Dunira House, Restalrig Road, South, Edinburgh, 7.
1924. M'GROUTHER, THOMAS, 36 Lenzie Road, Stepps, Lanarkshire.
1933. M'HARDY, IAN, Director of Education, Caithness, Randolph Place, Wick.
1930. M'INNES, JOHN, 3272 33rd Avenue West, Vancouver, B.C.
1926. M'INTIRE, WALTER T., B.A., St Anthony's, Milnthorpe, Westmorland.
- 1897.*MACINTYRE, P. M., Advocate, Auchengower, Brackland Road, Callander.
1934. MACINTYRE, WILLIAM, School House, Crouberry, Cumnock, Ayrshire.
1932. MACINTOSH, HUGH, F.R.I.B.A., 94 Sandy Lane, Wallington, Surrey.
- 1927.*MACKINTOSH, GORDON NASMYTH, Architect (no address).
1913. MACKINTOSH, H. B., M.B.E., Redhythe, Elgin.
- 1922.*MACKINTOSH, Rev. R. SMITH, Hon. C.F., The Manse, Girvan, Ayrshire.
1931. MACKAY, ALISTER MACBETH, Brauksholm, Epsom Road, Guildford.
1931. MACKAY, Mrs C. G., Cumberland Lodge, Bathwick Hill, Bath.
1925. MACKAY, DONALD, Member of the Scottish Land Court, 6 Learmonth Terrace, Edinburgh, 4.
1908. MACKAY, GEORGE, M.D., F.R.C.S.E., 10 Rothesay Place, Edinburgh, 3.
1924. MACKAY, GEORGE DODS, 3 Joppa Road, Joppa.
1932. MACKAY, J. B., A.R.I.A.S., Architect, H.M. Office of Works, 122 George Street, Edinburgh, 2.
1933. MACKAY, JOHN, S.S.C., 37 York Place, Edinburgh, 1.
1912. MACKAY, NORMAN DOUGLAS, M.D., B.Sc. D.P.H., Dall-Avon, Aberfeldy.
1929. MACKAY, Rev. P. HUGH R., M.A., St John's Manse, Torphichen, by Bathgate.
1934. MACKAY, R. F. B., F.R.A.I., B.A.(Cantab.), Glencruitten, Oban, Argyll.
1909. MACKEAN, Major NORMAN M., 21 Carriagehill Drive, Paisley.
1924. MACKECHNIE, Rev. JOHN, M.A. (Hons.), B.D., 3 Eldon Terrace, Partickhill, Glasgow
1923. MACKECHNIE, ROBERT G. S., R.B.A., 4 Watch Bell Street, Rye, Sussex.
1924. MACKELCKEN, LANGFORD H., L.R.I.B.A., 57 Kingsmead Road, Tulse Hill, London, S.W. 2.
1930. M'KELVIE, JAMES, 17 Rutland Square, Edinburgh, 1.
1923. MACKENZIE, ALEXANDER G. R., F.R.I.B.A., Lower Woodend, Marlow, Bucks.
1911. MACKENZIE, ALEXANDER J., Solicitor, Clydesdale Bank Buildings, 62 Academy Street, Inverness.
1933. MACKENZIE, Rev. ARCHIBALD, M.A., B.D., Minister of Ayr Parish, 36 Park Circus, Ayr.
1918. MACKENZIE, DONALD A., 19 Merchiston Crescent, Edinburgh, 10.
1919. MACKENZIE, HECTOR HUGH, J.P., 143 Warrender Park Road, Edinburgh, 10.
1910. MACKENZIE, MURDO TOLME, M.B., Scolpaig, Lochmaddy.
1882. MACKENZIE, R. W. R., Springland, Isla Road, Perth.
1931. MACKENZIE, THOMAS, J.P., F.E.I.S., Schoolhouse, Conon-Bridge, Ross-shire.
1904. MACKENZIE, WILLIAM COOK, Deargaul, St George's Road, St Margarets-on-Thames.
1904. MACKENZIE, W. M., M.A., D.Litt., 8 Cargil Terrace, Edinburgh, 5.—*Secretary*.
1928. M'KERROW, ALEXANDER ROBERT CAMPBELL, M.B., Ch.B. Edin., 52 South Street, St Andrews.
1926. M'KERROW, MATHEW HENRY, Solicitor, Dunard, Dumfries.
1926. MACKIE, ROBERT L., M.A., B.Litt., Lecturer in English and History, Dundee Training College, Greenloaning, Wormit, Fife.
1930. MACKILLOP, Rev. ALLAN MACDONALD, B.A., B.D., Lecturer, Faculty of Theology, Emmanuel College, Wickham Terrace, Brisbane, Queensland, Australia.
1930. MACKINNON, BENJAMIN BLACK, J.P., "Newark," 20 Hutchison Drive, Canniesburn, Bearsden, Glasgow.
1925. MACKINNON, Rev. DONALD, Free Church Manse, Portree, Skye.
1931. MACKINNON, DONALD S., Leob, Elliot Place, Colinton, Midlothian.
1915. MACKIRDY, Captain ELLIOT M. S. M.A. (Oxon.), Abbey House, Malmesbury, Wiltshire.
- 1919.*MACLAGAN, DOUGLAS PHILIP, W.S., 28 Heriot Row, Edinburgh, 3.—*Secretary*.
- 1923.*MACLAGAN, Miss MORAG, 28 Heriot Row, Edinburgh, 3.

1922. M'LAREN, THOMAS, Burgh Engineer, Redcliffe, Barnhill, Perth.
1926. MACLEAN, Rev. ANDREW COLQUHOUN, The Manse, Contin, Ross-shire.
1928. MACLEAN, ARCHIBALD, "Helenslea," Bridge of Allan.
1934. MACLEAN, DUGALD, M.A., LL.B., 10 York Place, Edinburgh, 1.
1934. MACLEAN, Rev. JOHN, Manse of Lochalsh, Balmacara, Kyle, Ross-shire.
1932. MACLEAN, ROBERT GELLATLY, F.A.I. (Lond.), 296 Ferry Road, Dundee.
- 1885.*MACLEHOSE, JAMES, M.A., LL.D., F.S.A., The Old Parsonage, Lamington, Lanarkshire.
1931. McLELLAN, ROBERT A., M.I.Loco.E., Invergarry, Church Stretton, Shropshire.
1934. McLEOD, ALEXANDER GRANT, M.A., "Harpdale," Campbell Street, Darvel, Ayrshire.
1930. McLEOD, DONALD, Suite 714, 736 Granville Street, Vancouver, B.C., Canada.
1933. MACLEOD, Rev. DONALD, The Manse, Applecross, Ross-shire.
1910. MACLEOD, P. T., 55 Grange Road, Edinburgh, 9.
1926. MACLEOD, Rev. JOHN, O.B.E., Hon. C.F., 8 Lansdowne Crescent, Glasgow, N.W.
1924. MACLEOD, Sir JOHN LORNE, G.B.E., LL.D., 72 Great King Street, Edinburgh, 3.
1922. MACLEOD, Rev. MALCOLM, M.A., 45 Balvicar Street, Queen's Park, Glasgow, S. 2.
1931. MACLEOD, MURDO, The Schoolhouse, Back, by Stornoway, Isle of Lewis.
1925. MACLEOD, Rev. WILLIAM, B.D., Ph.D., St Brouc Manse, Port-Bannatyne, Rothesay.
1919. MACLEROY, Rev. CAMPBELL M., B.D., Minister of the Church of Scotland, 13 Westbourne Gardens, Glasgow, W. 2.
1926. M'LINTOCK, JAMES, Ivy House, Lennoxtown.
1933. MACMASTER, THOMAS, Secretary, Caledonian Insurance Company, 190 Grange Loan, Edinburgh, 9.
1905. MACMILLAN, The Right Hon. LORD, of Aberfeldy P.C., LL.D., 44 Millbank, Westminster, London, S.W. 1.
- 1916.*McMILLAN, Rev. WILLIAM, D.D., Ph.D., Chaplain to the Forces, St Leonard's Manse, Dunfermline.
1928. MACMILLAN, WILLIAM E. F., F.S.A., 42 Onslow Square, London, S.W. 7.
1933. McMURDO, JAMES, 8571 144th Street, Jamaica, N.Y., U.S.A.
1915. MACNEIL, ROBERT LISTER, of Barra, North Hempstead Turnpike, Great Neck, Long Island, U.S.A.
1929. McNEILL, DAVID, M.A., School House, Loanhead, Midlothian.
- 1934.*McNEILL, NEIL, of Ardnacross, 17 Fenchurch Street, London, E.C. 3.
1933. MACNULTY, IGNATIUS, 81 Wallace Street, Malden, Mass., U.S.A.
1928. McPHERSON, Rev. ALEXANDER, B.D., Ph.D., The Manse, Grangemouth.
1918. MACPHERSON, DONALD, 3 St John's Road, Pollokshields, Glasgow, S. 1.
1933. MACPHERSON, HECTOR, 90-58 186th Street, Hollis, Long Island, New York, U.S.A.
1921. McPHERSON, JAMES, Kilrymonth, Tuffley Crescent, Gloucester.
- 1909.*MACRAE, Major COLIN, C.B.F., of Feoirinn, Colintrave, Argyll.
1926. MACRAE, Rev. DUNCAN, 26 Douglas Crescent, Edinburgh, 12.
1934. MACRAE, KENNETH, Applecross, Ross-shire.
1914. MACRAE-GILSTRAP, Lieut.-Colonel JOHN, of Eilean Donan, Ballimore, Otter Ferry, Argyll.
1929. MACRITCHIE, Rev. KENNETH A., The Parish Manse, Lairg, Sutherland.
1921. McROBBIE, WILLIAM ALEXANDER, F.S.I., 102 Desswood Place, Aberdeen.
- 1923.*MACROBERT, Lady, B.Sc., F.G.S., Douneside, Tarland, Aberdeenshire.
1935. MACVICAR, NEIL, W.S., 9 Belgrave Crescent, Edinburgh, 4.
1931. MACWILLIAM, HUGH DUFF, 65 Lissenden Mansions, London, N.W. 5.
1930. MABEY, ARTHUR JAMES, "Beechbank," 20 Avondale Road, South Croydon, Surrey.
1919. MACK, JAMES LOGAN, S.S.C., F.S.A., 10 Grange Terrace, Edinburgh, 9.
1931. MAGIAN, ANTHONY JOHN CAPPER, M.D., B.S., F.R.I.P.H., F.R.G.S., Rosslyn, Willow Bank, Fallowfield, Manchester.
1926. MAITLAND, Mrs, of Dundrennan, Cumstoun, Twynholm, Stewartry of Kirkcudbright.
1926. MAITLAND, Mrs MILDRED E., Ledard, Aberfoyle, Perthshire.
1928. MALCOLM, Sir IAN, of Poltalloch, K.C.M.G., D.L., J.P., 46 Bryanston Square, London, W. 1.
1914. MALLOCH, JAMES J., M.A., Norwood, Spylaw Bank Road, Colinton.
1919. MALLOCH, WILLIAM STRACHAN, 41 Charlotte Square, Edinburgh, 2.
1901. MANX, LUDOVIC McLELLAN, 183 West George Street, Glasgow, C. 2.

1921. MARR, C.M., HAMILTON CLELLAND, C.B., M.D.,
H.M. Commissioner of Control, Lieut.-Col.,
R.A.M.C., 10 Succoth Avenue, Murrayfield,
Edinburgh, 12.
1906. MARSHALL, HENRY B., Rachan, Broughton,
Peeblesshire.
1917. MARSHALL, JOHN NAIRN, M.D., Stewart Hall,
Rothesay.
1925. MARSHALL, WILLIAM, Belmont Castle, Meigle,
Perthshire.
1922. MARTIN, GEORGE MACGREGOR, 5 West Park
Gardens, Dundee.
1921. MARWICK, HUGH, M.A., D.Litt., Alton House,
Kirkwall, Orkney.
1925. MARWICK, JAMES GEORGE, J.P., 21 Graham
Place, Stromness, Orkney.
1933. MARWICK, THOMAS WALLER, A.R.I.B.A.,
A.M.I.Struct.E., 48 Melville Street, Edin-
burgh, 3.
1933. MASON, JOHN, 20 Abbotsford Street, Dundee.
- 1925.*MATHESON, NEIL, Forest Lodge, Selkirk.
1884. MAXWELL, The Right Hon. Sir HERBERT EUS-
TACE, Bt., K.T., D.C.L., LL.D., F.R.S., of Mon-
reith, Whauphill, Wigtownshire.
- 1892.*MAXWELL, Sir JOHN STIRLING, Bt., K.T., LL.D.,
H.R.S.A., Pollok House, Pollokshaws.
1935. MAXWELL, J. HARRISON, M.A., 21 Tay Crescent,
Riddrie, Glasgow.
- 1924.*MEIKLE, Rev. JAMES, B.D., 15 St Clair Terrace,
Edinburgh, 10.
1920. MELDRUM, Rev. NEIL, B.D., Ph.D., 26 Carden
Place, Aberdeen.
1929. MENZIES, WILLIAM, H.M. Inspector of Schools,
Mayfield, Melrose.
1900. MENZIES, W. D. GRAHAM, of Pitcur, Hally-
burton House, Coupar-Angus.
1927. MEREDITH, Rev. THOMAS DOWNIE, M.A., St
Luke's Manse, 25 Comely Bank, Edinburgh, 4.
1934. MIDDLETON, PIERCE, 6 Ramsay Garden, Edin-
burgh.
1927. MILLAR, J. A. S., M.V.O., W.S., 41 Coates
Gardens, Edinburgh, 12.
1930. MILLER, DAVID M'ROBERTS (no address).
1925. MILLER, FRANK, Corrie, Fruids Park, Annan,
Dumfriesshire.
1911. MILLER, STEUART NAPIER, M.A., Lecturer in
Roman History, The University, Glasgow.
1929. MILLER, Rev. THOMAS, St Helen's Manse, High
Bonnybridge, Stirlingshire.
1920. MILNE, Rev. A. A., Oakfield, Doune, Perthshire.
1929. MILNE, FRANCIS M., M.A., B.Sc., M.B., D.P.H.,
66 Seafield Road, Dundee.
1923. MILNE, GEORGE, Craigellie House, Lonmay,
Aberdeenshire.
1935. MITCHELL, GEORGE WILSON, Kirktown Mills
Drumblade, Huntly, Aberdeenshire.
1922. MITCHELL, Lieut.-Colonel J. M., O.B.E., M.C.
M.A., Secretary, Carnegie United Kingdom
Trust, Viewfield, Dunfermline.
1929. MITCHELL, Miss MARGARET E. CRICHTON, M.A.,
Ph.D., 246 Ferry Road, Edinburgh, 5.
1922. MOONEY, JOHN J.P., Cromwell Cottage, Kirk-
wall, Orkney.
1933. MOORE, WILLIAM M.A., 63 Old Dumbarton
Road, Glasgow, C. 3.
1921. MOORE, WILLIAM JAMES, L.R.C.S.E., L.R.C.P.E.,
F.R.F.P.S.G., 8 Clairmont Gardens, Glasgow,
C. 3.
1933. MORISON, Mrs D. B., 28 Kingsborough Gardens,
Hyndland Road, Glasgow, W. 2.
1931. MORLEY, HENRY T., F.R.Hist.S., B.Sc. (Archæ-
ology), J.P., Leicester House, King's Road,
Reading.
1934. MORPETH, ROBERT SPOTTISWOODE, Ph.C., M.P.S.
(no address).
1922. MORRIS, Professor H. CARLTON S., M.A.(Oxon.),
F.R.Hist.S., Hazeldean, Newstead, Melrose.
1882. MORRIS, JAMES ARCHIBALD, R.S.A., Architect,
Wellington Chambers, Ayr.
1934. MORRIS, S. V., "Woodlands," Newham Grange
Avenue, Stockton-on-Tees Co. Durham.
1928. MORRISON, ROBERT CLARK, 14 Magdala Cres-
cent, Edinburgh, 12.
1930. MORTLOCK, Rev. WILLIAM, M.Sc., F.R.G.S.,
F.R.S.A., 42 Southwood Avenue, W. South-
bourne, Bournemouth.
1930. MORTON, ALEXANDER SMITH, Solicitor, Victoria
Street, Newton-Stewart.
1922. MOSTYN-JONES, Rev. JOHN EDWARD, B.D.,
D.D., Emmanuel Vicarage, Northwood, Middle-
sex.
1934. MOWBRAY, Miss CECIL LOUISA, 5 Melville
Terrace, Stirling.
1925. MOWAT, JOHN, 24 Dunearn Street, Glasgow, C. 4.
1931. MOZEEEN-HUDSON, CYRIL, Hill Crest, Blyth
Grove, Worksop, Notts.
1925. MUGGOCH, Rev. JAMES WILSON, B.D., Martyrs
Parish Manse, Paisley.
1931. MUIR, Mrs GRAY, 17 Grosvenor Crescent, Edin-
burgh, 12.
1934. MUNROCH, JAMES, 15 Liberton Drive, Liberton,
Edinburgh, 9.
1928. MUNRO, Rev. DONALD, D.D., Free Church
Manse, Ferintosh, Conon Bridge, Ross-shire.
1932. MUNRO, W. A., D.Litt., Taynult, Newtown St
Boswells.
1933. MURRAY, CHARLES STEWART, 8 Hillview,
Blackhall, Edinburgh.

1920. MURRAY, Captain H. W., late Technical Assistant, London Museum, c/o Messrs Stevenson & Cauldwell, 5 Fenchurch Street, London, E.C. 3.
1920. MURRAY, JAMES, J.P., Bank Agent, Kenwood, Bishopbriggs, Glasgow.
1931. MURRAY, JOSEPH HENRY, Glengyle Lodge, 68 Bruntsfield Place, Edinburgh, 10.
1926. MURRAY, Miss LOUISA, The White House, Anstruther, Fife.
- 1905.*MURRAY, P. KEITH, W.S., 19 Charlotte Square, Edinburgh, 2.
- 1911.*NAPIER, GEORGE G., M.A., 9 Woodside Place, Glasgow.
- 1927.*NAPIER, J. G., Retired Tea Planter, 13 Lynedoch Place, Edinburgh, 3.
1933. NAPIER, JOHN WATSON, M.I.Chem.E., Mansfield, Alloa.
1930. NAPIER, ROBERT WEST, F.R.S.A., 43 Warrender Park Terrace, Edinburgh, 10.
1928. NEIL, N. A. G., Architect, 7 Glenorchy Terrace, Edinburgh, 9.
1923. NELSON, Mrs. Beechwood, Calderstones, Liverpool, 18.
1927. NICHOLSON, CREGOE DONALDSON PERCY, F.S.G., Bodinnick, 51 Jersey Road, Lampton, Hounslow, Middlesex.
1932. NICOLL, JAMES S., Livingstone Cottage, 40 Brechin Road, Arbroath.
1923. NOTMAN, ROBERT CARFRAE, W.S., 15 York Place, Edinburgh, 1.
1922. OCHTERLONY, CHARLES FRANCIS, Overburn, Lanark Road, Currie, Midlothian.
1930. O'DONNELL, HENRY, F.P.C., M.S.P. (no address).
1924. OGILVIE, JAMES D., Barloch, Milngavie.
1932. OGILVIE, Major-General Sir WALTER, K.B.E., C.B., C.M.G., 3 Spylaw Road, Edinburgh, 10.
- 1907.*OKE, ALFRED WILLIAM, B.A., F.L.S., 32 Denmark Villas, Hove, Sussex.
1928. OLIPHANT, Rev. JOHNSTON, B.D., The Manse, Abercorn, South Queensferry.
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1927. O'MALLEY, Mrs OWEN, Bridge End, Ockham, Surrey.
1928. ORR, Rev. A. CLARK, M.A., Manse of Borthwick, Gorebridge, Midlothian.
1916. ORR, LEWIS P., F.F.A., 3 Belgrave Place, Edinburgh, 4.
1921. ORR, STEWART, R.S.W., Corrie House, Corrie, Arran.
1933. ORROCK, W. A., S.S.C., Allanshaugh, Fountainhall, Midlothian.
1928. OSBORNE, Rev. THOMAS, Minister of Cockenzie Parish Church, Cockenzie Manse, Prestonpans.
1930. OWEN, CHARLES HAGEN, M.A., Windyridge, Wensley Grove, Harrogate.
1917. PARK, FRANKLIN A., 149 Broadway, New York.
1931. PARSONS, JOHN WHITEHILL, Broomers House, Pulborough, Sussex.
1922. PATERSON, GEORGE DUNCAN, 3 Balgay Avenue, Dundee.
1927. PATERSON, Miss HILDA MAUD LESLIE, Birkwood, Banchory, Kincardineshire.
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1915. PATERSON, JOHN WILSON, M.V.O., M.B.E., A.R.I.B.A., Principal Architect, H.M. Office of Works, 11 Abinger Gardens, Murrayfield, Edinburgh, 12.
1930. PATERSON, The Very Rev. WILLIAM P., D.D., LL.D., Professor of Divinity in the University of Edinburgh, Dalmore, 17 South Oswald Road, Edinburgh, 9.
1925. PATIENCE, ALEXANDER, "Pilmor," 2 Carrick Drive, N. Mt. Vernon, near Glasgow.
1934. PATON, EDWARD RICHMOND, B.A.(Cantab.), F.Z.S., M.B.O.U., of Hareshawmuir, *via* Kilmarnock, Ayrshire.
1924. PATON, JAMES, 80 High Street, Lanark.
1919. PATRICK, JOSEPH, M.A., C.A., Macdonallie, Lochwinnoch.
1933. PATRICK, WILLIAM MACFARLANE, Architect, F.R.I.A.S., 35 Lintrathen Gardens, Dundee.
1928. PATTERSON, CHARLES, F.R.S.E., Lecturer, University of Edinburgh, 22 Dudley Terrace, Trinity, Edinburgh, 6.
1925. PATTERSON, RICHARD FERRAR, M.A. (Cantab.), D.Litt.(Glas.), Graham's Dyke, Bearsden, Dumbartonshire.
1909. PAUL, ARTHUR F. BALFOUR, Architect, 16 Rutland Square, Edinburgh, 1.
1928. PAUL, Lieut.-Colonel J. W. BALFOUR, D.S.O., *Falkland Pursuivant*, Cakemuir, Tynehead, Midlothian.
1923. PAXTON, Rev. WILLIAM, F.R.G.S., 48 Creighton Avenue, Muswell Hill, London, N. 10.
1923. PEARSON, Rev. Professor A. F. SCOTT, M.A., B.D., D.Th., D.Litt., F.R.Hist.S., The Manse, Johnstone, Renfrewshire.

1927. PEARSON, WILLIAM P., F.L.A.A., 49 Cherryfield Avenue, Ranelagh, Dublin.
1904. PEDDIE, ALEXANDER L. DICK, W.S., 13 South Learmonth Gardens, Edinburgh, 4.
1932. PEOCK, Miss MARY. M.A., South Corner, Homefield Road, Liverpool, 19.
1930. PETERS, ARTHUR BOWDEN, F.R.Met.S., Librarian and Curator, Inverness Public Library.
1919. PHILLIPS, DAVID RHYS, F.L.A., Baili Glas, 15 Chaddeley Terrace, Swansea.
1926. PILKINGTON, ALAN D., Dean Wood, Newbury, Berks.
1925. POLSON, ALEXANDER, 6 East Caiystane Road, Edinburgh.
1921. PORTER, Mrs BLACKWOOD, West Lodge, North Berwick.
- 1901.*PORTLAND, His Grace The Duke of, K.G., Welbeck Abbey, Notts.
1921. POWRIE, Mrs. Earlie Bank. Craigie, Perth.
1927. PRENTICE, JAMES, Athelstane, Crieff, Perthshire.
- 1911.*PRESTON, FRANK A. B., M.R.S.L., M.S.A., Druimdarroch, 27 Ferguson Avenue, Milngavie.
1906. PRINGLE, ROBERT M., Spottiswoode, Barnton Park, Davidson's Mains, Edinburgh, 4.
1924. PULLAR, PETER MACDOUGALL, 24 St Ronan's Drive, Shawlands, Glasgow, S. 1.
1926. PURDIE, THOMAS, Aucheneck, Killearn, Stirlingshire.
1924. PURVES, JOHN M., M.C., 5 Meadow Place, Edinburgh, 10.
1912. QUICK, RICHARD, Secretary of the Bournemouth Natural Science Society, "Tregenna," Castle Lane, Bournemouth, N.
1928. QUIG, Rev. GORDON, M.A., B.D., The Manse, Monifieth, by Dundee.
1932. QUIG, JAMES SYMINGTON, Ravenscraig, Falkirk.
1921. RAE, JOHN N., S.S.C., 2 Danube Street, Edinburgh, 4.
1906. RAIT, Sir ROBERT SANGSTER, K.B.E., D.L., LL.D., Principal of Glasgow University, 13, The University, Glasgow.
1932. RAMSAY, DAVID GEORGE, M.A., B.Sc., Rector of Kirkcudbright Academy, Skair Kilndale, Kirkcudbright.
- 1924.*RAMSAY, DOUGLAS M., J.P., Bowland, Galashiels, Selkirkshire.
1928. RANDALL-MACIVER, DAVID, M.A., D.Sc., c/o Messrs Brown Shipley & Co., 123 Pall Mall, London, S.W. 1.
- 1908.*RANKIN, WILLIAM BLACK, of Cleddans, 2 Rothesay Terrace, Edinburgh, 3.
1935. RANKINE, WILLIAM FRANCIS, Badshot Lea, Surrey.
1927. RATCLIFFE, JOSEPH RILEY, M.B., C.M. (Edin.), F.R.S.E., 22 Wake Green Road, Moseley, Birmingham.
1906. RAVEN, ALEXANDER JAMES, c/o The Bank of Adelaide, 11 Leadenhall Street, London, E.C. 3.
1928. REEKIE, ALEXANDER, J.P., 22 Greenlaw Avenue, Paisley, Librarian, Public Library, Paisley.
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- 1897.*REID, The Right Rev. EDWARD T. S., M.A., D.D., Bishop of St Andrews, Castlebrae, Auchterarder.
1931. REID, JOHN, J.P., 27 Lintrathen Gardens, Dundee.
1932. REID, WILLIAM, M.B.E., D.L., J.P., 8 Douglas Terrace, West Ferry, Angus.
1931. RENILSON, JOHN, Queen Mary's House, Jedburgh.
- 1921.*RENNIE, JOHN, Welleroft, Helensburgh.
1926. REOCH, JOHN, Hawthornden, Erskine Road, Whitecraigs, Renfrewshire.
1935. RICE, D. TALBOT, M.A., B.Sc., Professor of Fine Art, Edinburgh University, 2 Moray Place, Edinburgh, 3.
1917. RICHARDSON, Rev. ANDREW T., Birksgate, Victoria Road, Kirkcaldy.
- 1928.*RICHARDSON, FRANCIS, Blairforkie, Bridge of Allan.
- 1912.*RICHARDSON, JAMES S., Inspector of Ancient Monuments, H.M. Office of Works, 122 George Street, Edinburgh, 2,—*Curator of Museum*.
1923. RICHARDSON, JOHN, W.S., 28 Rutland Square, Edinburgh, 1.
1928. RICHARDSON, JOHN, Solicitor, The Hollies, Musselburgh.
1925. RICHARDSON, W. ALLISTER M. G., 25 Bruntsfield Gardens, Edinburgh, 10.
1919. RICHMOND, O. L., M.A., Professor of Humanity, University of Edinburgh, 5 Belford Place, Edinburgh, 4.
1929. RIDEOUT, ERIC HARDWICKE, M.A., B.Sc., A.I.C., Thelwall Lea, near Warrington, Lancashire.
1925. RITCHIE, Professor JAMES, M.A., D.Sc., F.R.S.E., Natural History Department, Marischal College, Aberdeen.
1922. RITCHIE, WILLIAM MUIR, 11 Walkinshaw Street, Johnstone, Renfrewshire.
1907. ROBB, JAMES, LL.B., LL.D., 26 Ormisdale Terrace, Edinburgh, 12.

1933. ROBB, JAMES A. T., 128 Beechwood Gardens, Ilford, Essex.
1933. ROBERTS, FERGUS, Joint Town Clerk, Brooklands, Dumbarton.
1926. ROBERTSON, ALEXANDER D., M.A., Stevenson Park, Carlisle, Lanarkshire.
1927. ROBERTSON, Rev. ARCHIBALD E., M.A., B.D., 17 Cluny Gardens, Edinburgh, 10.
1935. ROBERTSON, Rev. CHARLES P., M.A., "Norwood," 41 Queen Mary Avenue, Glasgow, S. 2.
1926. ROBERTSON, GEORGE S., M.A., The Cottage, Viewfield Road, Arbroath.
1930. ROBERTSON, JAMES MEIKLEJOHN, Architect, A.R.I.A.S., "Hamelin," 52 Craiglockhart Road, Edinburgh, 11.
1910. ROBERTSON, JOHN, J.P., 21 Lammerton Terrace, Dundee.
1915. ROBERTSON, ROBERT BURNS, M.V.O., Chapter Surveyor, St George's Chapel, Windsor Castle.
1928. ROBERTSON, THOMAS ATHOLL, Inveratholl, Alderman's Hill, Palmer's Green, London, N. 13.
1905. ROBERTSON, W. G. AITCHISON, M.D., D.Sc., F.R.C.P.E., St Margaret's, St Valerie Road, Bournemouth.
1925. ROBERTSON, WALTER MUIR, M.B., Ch.B., Rowallan, Grange Road, Alloa.
1927. ROBERTSON, WILLIAM CORMACK, 8 Plewlands Gardens, Edinburgh, 10.
1914. ROBISON, JOSEPH, 14 Castle Street, Kirkcudbright.
1934. RODERICK, H. H., 12 Battlefield Avenue, Glasgow, S. 2.
1925. ROGER, GEORGE GUTHRIE, M.A., B.Sc., 3 Myrtle Terrace, Newport, Fife.
1928. ROGERSON, Rev. CHARLES, M.A., Villa Roma, Sandown Road, Shanklin, Isle of Wight.
1923. ROLLAND, Miss HELEN M., 6 Murrayfield Drive, Edinburgh, 12.
1924. ROSE, Sir H. ARTHUR, Bt., D.S.O., LL.D., 23 Anslie Place, Edinburgh, 3.
1934. ROSENBLOOM, ISAAC, 5 Palmerston Road, Grange, Edinburgh, 9.
1924. ROSS, DONALD, M.B., Tigh-na-Linne, Lochgilphead, Argyll.
1929. ROSS, JAMES, 10 Midmar Gardens, Edinburgh, 10.
1922. ROSS, Major JOHN, Euroa, Langbank.
1928. ROSS, JOHN D., LL.D., 8736 97th Street, Woodhaven, N.Y., U.S.A.
1926. ROSS, Dr WINIFRED M., Auchendean, Dulnain Bridge, Inverness-shire.
1927. ROWATT, THOMAS, Director, Royal Scottish Museum, Spottiswoode, Colinton.
1915. RUSK, J. M., S.S.C., Clinton House, Whitehouse Loan, Edinburgh, 10.
- 1930.*RUSSELL, DAVID, LL.D., Rothes, Markinch, Fife.
1914. RUSSELL, JOHN, 2 Brunton Place, Edinburgh, 7.
1923. ST VIGEANS, The Hon. LORD, LL.D., 33 Moray Place, Edinburgh, 3.
- 1925.*SALVESEN, IVER R. S., 6 Rothesay Terrace, Edinburgh, 3.
- 1930.*SALVESEN, THEODORE E., F.R.S.E., 37 Inverleith Place, Edinburgh, 4.
1934. SAMSON, DAVID THOMAS, D.L., Old Cullen, Cullen, Banffshire.
1930. SANDERSON, KENNETH, W.S., 5 Northumberland Street, Edinburgh, 3.
1930. SCARTH, HENRY W., of Breckness, Skail House, Orkney.
1928. SCHLEICHER, CHARLES, Attaché au Ministère des Affaires Etrangères, Trésorier de la Société Préhistorique Française, 9 rue de Verneuil, Paris—VII^e.
- 1910.*SCOBIE, Major IAIN H MACKAY, 1st Seaforth Highlanders, 1 Coates Place, Edinburgh, 3.
1926. SCOTT, DOUGLAS H., M.B., Ch.B., 5 King's Court, London, S.W. 19.
1903. SCOTT, JOHN, W.S., 13 Hill Street, Edinburgh, 2.
- 1921.*SCOTT, R. L., 11 Newark Street, Greenock.
1933. SCOTT, WILLIAM, Curator, Barnbougle Castle, Dalmeny House, Midlothian.
1931. SCOTT, W. LINDSAY, D.S.C., B.A., 7 Lambolle Road, Hampstead, London, N.W. 3.
1931. SCOTT MONCRIEFF, Miss MARTHA C., Rocklands, Elie, Fife.
1915. SCRYMGEOUR, NORVAL, Fellow of the Institute of Journalists, Summerfield, Longforgan, by Dundee.
1930. SERJEANTSON, R. J., Troughend, Brora, Sutherland.
1929. SETON-ANDERSON, JAMES (no address).
- 1913.*SHAND, J. HARVEY, W.S., 38 Northumberland Street, Edinburgh, 3.
- 1927.*SHARP, ANDREW M., 8 South Inverleith Avenue, Edinburgh, 4.
1917. SHAW, JULIUS ADOLPHUS, Mus D. Trin Coll Dublin, L Mus. T.C.L., Beech Field, 169 Withington Road, Whalley Range, Manchester, 16.
1918. SHAW, MACKENZIE S., W.S., 1 Thistle Court, Edinburgh, 2.

1932. SHAW, NEIL, General Secretary and Organiser, *An Comunn Gaidhealach*, Octavia Buildings, Kilmacolm.
1930. SHAW, R. CUNLIFFE, M.Sc., F.R.C.S.Eng., L.R.C.P. (London), 24 Ribblesdale Place, Preston, Lancashire.
1917. SHAW, WILLIAM B., F.R.Hist.Soc., Honorary Curator of the Collections of the Presbyterian Historical Society of England, London, 56 Sandy Lane, Stretford, Manchester.
1920. SHEPPARD, THOMAS, M.Sc., F.G.S., F.R.G.S., Director, The Municipal Museums, Hull.
1933. SHEPPERD, C. B., M.A.(Oxon.), B.Sc.(Oxon.) (no address).
1917. SHIELDS, COURTENAY JOHN, C.A., 17 Melville Street, Edinburgh, 3.
1927. SIMPSON, ALEXANDER, J.P., West Leigh, Pitfodels, Aberdeenshire.
- 1930.*SIMPSON, Miss MARGARET E. BARBOUR, M.A., Assistant Inspector of Ancient Monuments for Scotland, 43 Manor Place, Edinburgh, 3.
1926. SIMPSON, RICHARD J., Hermitage, Corstorphine, Edinburgh, 12.
1919. SIMPSON, WILLIAM DOUGLAS, M.A., D.Litt., Librarian, Aberdeen University, The Chaplains' Court, Chanonry, Old Aberdeen.
1931. SIMPSON, W. N., 31 Broomley Drive, Giffnock, Renfrewshire.
1908. SINCLAIR, COLIN, M.A., Ph.D., F.R.I.B.A., St Margaret's, Ralston Avenue, Crookston, Glasgow, S.W. 2.
1919. SINCLAIR, JOHN, Fallin Public School, Stirling.
1926. SINCLAIR, JOHN H., 204 West Regent Street, Glasgow.
1909. SKINNER, ROBERT TAYLOR, M.A., F.R.S.E., 35 Campbell Road, Edinburgh, 12.
1928. SLATER, JOHN MURRAY, Provost of Kirkwall, Vögablik, Kirkwall.
1929. SLIMON, ALEXANDER M., Moyhall, Kirkintilloch.
1928. SMALLWOOD, ROBERT HENRY GOUGH, Banker, 3 Carlton Villas, Wrexham, N. Wales.
1922. SMEALL, THOMAS YOUNG, Solicitor, Castlewood, Jedburgh.
1934. SMELLIE, THOMAS, Architect, 46 Portland Road, Kilmarnock.
1933. SMITH, ALEXANDER, M.A., F.R.S.A., 24 Archbold Terrace, Jesmond, Newcastle-upon-Tyne.
1930. SMITH, Miss ANNETTE, 11 Midmar Gardens, Edinburgh, 10.
1931. SMITH, Rev. COLIN, M.A., Free Church Manse, Campbelltown.
1910. SMITH, DAVID BAIRD, C.B.E., LL.D., 5 Kirklee Terrace, Glasgow, W. 2.
1933. SMITH, DAVID G., M.A., 15 Gloucester Place, Edinburgh, 3.
1925. SMITH, JOHN, 14 Viewforth Gardens, Edinburgh, 10.
1934. SMITH, JOHN, B.Sc., Chief Conservator of Forests, Sudan Government, Birkhill, Coalburn, Lanarkshire.
1932. SNYDER, Professor FRANKLYN B., A.M., Ph.D., Professor of English, Northwestern University, 1624 Ashland Avenue, Evanston, Illinois, U.S.A.
1921. SOUTAR, CHARLES GEDDES, F.R.I.B.A., 15 South Tay Street, Dundee.
1935. SOUTER, GEORGE, Drynie, Dingwall.
1928. SPACKMAN, CYRIL SAUNDERS, R.B.A., L.R.I.B.A., R.M.S., F.R.S.A., F.R.S.A.I., The Studio, Edridge Road, Croydon, Surrey.
- 1910.*SPENCER, Colonel CHARLES LOUIS, C.B.E., D.S.O., 5 Great Western Terrace, Glasgow.
- 1910.*SPENCER, JOHN JAMES, 5 Great Western Terrace, Glasgow.
1922. SPENS, THOMAS PATRICK, W.S., 169 West George Street, Glasgow, C. 2.
1935. STEEL, Miss ANNIE, LL.A., The Croft, Annan.
1920. STEPHEN, Rev. WILLIAM, B.D., D.D., The Manse, Inverkeithing.
1902. STEUART, JAMES, O.B.E., W.S., 25 Rutland Street, Edinburgh, 1.
1922. STEUART, Mrs MACKENZIE, Down, Whimble, Devon.
1930. STEVENS, C. E., M.A., Fellow of Magdalen College, Oxford.
1933. STEVENSON, Captain EDWARD DAYMONDE, M.C., C.V.O., Secretary and Treasurer, The National Trust for Scotland, 4 Great Stuart Street, Edinburgh, 3.
1927. STEVENSON, Major HERBERT H. M'D., The Lee, Lanark.
1895. STEVENSON, JOHN H., M.B.E., K.C., *Marchmont Herald*, 9 Oxford Terrace, Edinburgh, 4.
1913. STEVENSON, NORMAN, Dechniunt View, Sandyhills, Shettleston.
1913. STEVENSON, PERCY R., 7A Young Street, Edinburgh, 2.
1922. STEWART, ANDREW, ILM, Inspector of Taxes, 2 Caird Drive, Partick, Glasgow, W. 1.
1922. STEWART, CHARLES, C.A., Bracken Bruach, Downfield, Dundee.
- 1925 *STEWART, IAN R. H., 2 Stuart Road, Wimbledon Park, London, S.W. 19.
- 1917.*STEWART, JOHN ALEXANDER, 104 Cheapside Street, Glasgow.

1925. STEWART, Miss RANOLINA, 19 Blacket Place, Edinburgh. 9.
1925. STIRLING. Lt.-Colonel ARCHIBALD, of Garden, Sandyholes, Kippen, Stirlingshire.
1908. STIRTON, Rev. JOHN, M.V.O., B.D., D.D., The Manse, Crathie, Ballater.
1925. STORIE, WILLIAM STEVENSON, L.A., S.S.C., N.P., 9 Merchiston Crescent, Edinburgh, 10.
- 1930.*STRATHCONA and MOUNT ROYAL, The Right Hon. LORD, 14 South Audley Street, London, W. 1.
1922. STRINGER, E. W. SCOBIE, M.C.H., M.R.A.S., M.R.S.T., "Twinhills," Portway, Wells, Somerset.
1929. STRUTHERS, Major JAMES G., D.S.C., Bonawe Quarries, Connel, Argyll.
1933. STURROCK, J. FREDERICK, Regent Works, 16 Milne's East Wynd, Dundee.
1925. SUTHERLAND, His Grace The Duke of, Dunrobin Castle, Sutherland.
1928. SUTHERLAND, J. R., Christian Institute, Hamilton Street, Mother ell.
1923. TUTTLE, ARNOLD, L.R.I.B.A., M.Inst.M. & C.Y.E., M.R.S.I., 2 Victoria Avenue, Harrogate, Yorkshire.
1916. SWAN, T. AIKMAN, A.R.I.B.A., 7 St Colme Street, Edinburgh. 3.
1900. SWINTON, Captain GEORGE S. C., 28 Albert Hall Mansions, London, S.W. 7.
- 1916.*TAIT, EDWYN SEYMOUR REID, Bydin, St Olaf Street, Lerwick, Shetland.
1933. TAIT, JAMES, 431 E. Congress Street, Detroit, Mich., U.S.A.
- 1927.*TAYLER, ALISTAIR N., B.A.Oxon., 181 Queen's Gate, London, S.W. 7.
1929. TAYLOR, ALEXANDER B., M.A., Lower Rosemount, 8 Forthill Road, Broughtly Ferry, Angus.
1927. TAYLOR, CHARLES, 13 Westland Drive, Scotstoun, Glasgow, W. 4.
1931. TAYLOR, CHARLES HENRY, Collegehill House, Roslin, Midlothian.
1917. TAYLOR, FRANK J., 21 Tankerville Terrace, Jesmond, Newcastle-on-Tyne.
1927. TAYLOR, GLEN A., M.I.Mech E., F.S.A., 63 Lewis Road, Neath, Glamorgan.
1929. TAYLOR, JAMES, 5604 De Longpre Avenue, Hollywood, California.
1930. TAYLOR, JOHN, Collegehill House, Roslin, Midlothian.
1902. THIN, ROBERT, M.A., M.B., C.M., I.L.D., 25 Abercromby Place, Edinburgh, 3.
- 1926.*THOMPSON, Professor HAROLD WILLIAM, A.M., Ph.D., New York State College, Albany, New York State, U.S.A.
- 1906.*THOMPSON, DAVID COUPER, J.P., D.L., Inveravon, Broughtly Ferry.
- 1921.*THOMPSON, EDWARD JOHN, 6 Windsor Terrace West, Kelvinside, Glasgow.
1920. THOMPSON, GEORGE CLARK, Barrister-at-Law, Swift Current, Saskatchewan, Canada.
1913. THOMPSON, JAMES, The Cedars, 21 Fortis Green, East Finchley, London, N. 2.
1930. THOMPSON, JAMES CORNWALLIS, C.A., 35 Saltoun Street, Glasgow, W. 2.
1913. THOMPSON, JOHN GORDON, S.S.C., 54 Castle Street, Edinburgh, 2.
1927. THOMPSON, J. F. GORDON, M.A., Advocate, 26 Heriot Row, Edinburgh, 3.
1931. THOMPSON, J. MILLER, W.S., 5 St Colme Street, Edinburgh, 3.
1926. THOMPSON, LESLIE GRAHAME, A.R.I.B.A., F.R.I.A.S., The Neuk, Lyneside, West Linton, Peeblesshire.
1927. THOMPSON, Mrs. Callands, West Linton, Peeblesshire.
1923. THOMPSON, T. R. F., M.A., F.R.Hist.S., Benenden, Kent.
1910. THOMPSON, WILLIAM N., Architect, Hope Chambers, 52 Leith Walk, Edinburgh, 6.
1911. THORBURN, Lt.-Col. WILLIAM, O.B.E., Woodville, Annan, Dumfriesshire.
1930. THORNECROFT, WALLACE, of Dalruizeon, Strete Raleigh, Whimple, Exeter.
1932. THRIEPLAND, PATRICK WYNDHAM MURRAY, Dryburgh Abbey, St Boswells.
- 1933.*THYNE, JAMES COWAN, St Helens, Downfield, Dundee.
1930. TOD, THOMAS M., West Brackly, Kinross.
1924. TOD, WILLIAM A., Dunrobin, Belfield Road, West Ewell, Surrey.
1935. TOLLAND, Rev. JAMES, The Manse, Belmont Church Road, Belfast.
- 1902.*TRAILL, H. LIONEL NORTON, F.R.G.S., Capt., 4th Highland Light Infantry, Villa Maria, via Romana, Bordighera, Italy.
1917. TRAILL, WILLIAM, C.E., J.P., Holland, Papa Westray, Orkney.
1932. TRANTER, NIGEL G., Mavismeade, 18 McDonald Place, Edinburgh, 7.
- 1922.*TROTTER, GEORGE CLARK, M.D., Ch.B. (Edin.), D.P.H. (Aberd.), F.R.S.E., Braemar, 17 Haslemere Road, Crouch End, London, N. 8.
1934. TRIKE, Rev. WILLIAM MAGEL, Kilmore, Bridge of Allan.
1924. TULLIS, JAMES KENNEDY, Baingle Brae, Tullibody, by Stirling.

1925. TULLOCH, JAMES, M.A., 5 Wilton Gardens, Glasgow, N.W.
1934. TULLOCH, ROBERT G., M.A., c/o Mrs Ross, 17 Dudley Gardens, Edinburgh, 6.
1922. TURNBULL, JOHN W., Kilbride, Millhouse, Argyll.
1925. TURNER, FRED. A., F.R.Hist.S., Lasswade Cottage, 15 Penwerris Avenue, Osterley, Middlesex.
- 1917.*URQUHART, ALASTAIR, D.S.O., Bachelors' Club, Piccadilly, London, W. 1.
1921. URQUHART, EDWARD A., 11 Queensferry Street, Edinburgh, 2.
1930. VALE, THOMAS H., A.C.A., Pakington House, Rosemary Hill Road, Little Aston, Staffs.
- 1935.*VALENTINE, WILLIAM HARRIS, The Mansion House, Auchterhouse, by Dundee.
- 1920.*VARMA, Prof. S. P., M.A., of Robertson College, Jubbulpore, C.P., India.
1933. VEITCH, GEORGE, C.A., 14 Chalmers Crescent, Edinburgh, 9.
1927. VERNON, Rev. WILLIAM FREDERIC, M.A., B.D., Holy Trinity Rectory, Alloway Place, Ayr.
1921. WADDELL, J. JEFFREY, I.A., Architect, Caldergrove, Hallside, Lanarkshire.
1934. WAITES, JAMES ARTHUR, A.M.E.E.S., F.R. Asiatic S., 14 Owen Street, Accrington, Lancs.
1928. WALKER, ALEXANDER, 424 Great Western Road, Aberdeen.
1928. WALKER, Rev. GEORGE A. EVERETT, Minister of Parish of Benholme, Manse of Benholme, Johnshaven, Montrose.
1926. WALKER, ROBERT J., M.A., Boroughmuir Secondary School, Viewforth, Edinburgh, 10.
- 1924.*WALKER, W. GLASSFORD, C.A., 2 Denham Green Avenue, Trinity, Edinburgh, 5.
1926. WALKER-LOVE, THOMAS, M.B., Greenbank, Clark Street, Airdrie.
1928. WALLACE, JAMES, M.A., Rector of Vale of Leven Academy, "Glenleven," Alexandria, Dumbartonshire.
1927. WALLIS, W. CYRIL, Assistant Keeper, Art and Ethnographical Department, Royal Scottish Museum, 53 Spottiswoode Street, Edinburgh, 10.
1935. WARDROP, ROBERT NEWLANDS, B.Com., 15 Bridge Street, Musselburgh.
1919. WARR, The Very Rev. CHARLES LAING, M.A., D.D., Minister in St Giles Cathedral, Dean of the Most Ancient and Most Noble Order of the Thistle, and Dean of the Chapel Royal in Scotland, 63 Northumberland Street, Edinburgh, 3.
- 1917.*WARRACK, JOHN, LL.D., 13 Rothesay Terrace, Edinburgh, 3.
1923. WARRACK, MALCOLM, 7 Oxford Terrace, Edinburgh, 4.
1932. WASON, C. R., Lecturer in Classical Archæology in the University of Edinburgh, 18 Eglinton Crescent, Edinburgh, 12.
1916. WATERSON, DAVID, R.E., Bridgend House, Brechin.
1924. WATERSTON, CHARLES B., 25 Howard Place, Edinburgh, 4.
1933. WATERSTON, Professor DAVID, M.A., M.D., F.R.C.S.E., Bute Professor of Anatomy, 2 Howard Place, St Andrews, Fife.
1904. WATLING, H. STEWARD, Architect, Manor Close, Cornwall Road, Harrogate.
- 1907.*WATSON, CHARLES B. BOOG, F.R.S.E., 24 Garscube Terrace, Murrayfield, Edinburgh, 12.
1924. WATSON, GEORGE MACKIE, Architect, 50 Queen Street, Edinburgh, 2.
1913. WATSON, G. P. H., F.R.I.B.A., Royal Commission on Ancient and Historical Monuments of Scotland, 27 York Place, Edinburgh, 1.
1922. WATSON, HENRY MICHAEL DENNE, C.A., 12 Henderland Road, Murrayfield, Edinburgh, 12.
- 1927.*WATSON, JOHN HILL, of Grangehill, Beith, Ayrshire.
- 1908.*WATSON, JOHN PARKER, W.S., Greystane, Kinellan Road, Murrayfield, Edinburgh, 12.
1930. WATSON, THOMAS WILLIAM, J.P., The Schoolhouse, Gullane.
- 1927.*WATSON, WILLIAM ELDER, O.B.E., J.P., Moray Bank, Elgin.
1912. WATSON, WILLIAM J., M.A., LL.D., D.Litt.Celt., F.R.S.E., Professor of Celtic Languages, Literature and Antiquities, University of Edinburgh, 17 Merchiston Avenue, Edinburgh, 10.
1933. WATT, Rev. DOUGLAS W., M.A., The Manse of Phusarden, Elgin.
- 1907.*WATT, JAMES, LL.D., W.S., F.F.A., 7 Blackford Road, Edinburgh, 9.
1908. WATT, The Very Rev. LAUCHLAN MACLEAN, M.A., B.D., D.D., LL.D., Kinloch, Lochcarron, Ross-shire.
- 1923.*WATT, WILLIAM J. C., M.B., Ch.B., 71 High Street, Paisley.
1879. WEDDERBURN, J. R. M., M.A., W.S., 3 Glencairn Crescent, Edinburgh, 12.
1928. WEIR, Rev. HAROLD GEORGE MULLO, M.A., The Manse, Dalry, Kirkeudbrightshire.

1925. WEIR, JAMES MULLO, S.S.C., 21 Mayfield Terrace, Edinburgh. 9.
1927. WEIR, WALTER, 18 Cathkin Road, Langside, Glasgow.
1926. WESTELL, WILLIAM PERCIVAL, F.L.S., M.R.A.I. The Museum, Town Square, Letchworth, Hertfordshire.
1932. WESTON, PERCY WILLIAM, F.R.E.S., F.R.G.S. F.R.H.S., F.C.S., F.Z.S., Villa Cbapport, Tangier, Morocco.
1925. WHITE, WILLIAM, Shore Road, Anstruther, Fife.
1903. WHITELAW, ALEXANDER, Gartsbore, Kirkintilloch.
- 1902.*WHITELAW, CHARLES EDWARD, F.R.I.A.S., 22 Midmar Gardens, Edinburgh. 10.
1928. WHITELAW, Rev. HERBERT A., High Church Manse, 2 Brighton Terrace, Craigmore, Rotbessay, Bute.
1909. WHITTAKER, CHARLES RICHARD, F.R.C.S., F.R.S.E., Lynwood, 27 Hatton Place, Edinburgh. 9.
1897. WILLIAMS, H. MALLAM, J.P., Tilehurst, 34 Southern Road, West Southbourne, Bournemouth, Hants.
1928. WILLIAMSON, ROBERT F., 4 Grange Terrace, Edinburgh. 9.
1930. WILSON, ARTHUR, J.P., 6 Saltoun Gardens, Glasgow, W. 2.
1935. WILSON, ARTHUR W., "Ormeau," Cupar, Fife.
1933. WILSON, DAVID, A.R.I.A.S., 5 Findlay Grove, Restalrig, Edinburgh. 7.
1929. WILSON, GEORGE VICTOR, of H.M. Geological Survey, 19 Grange Terrace, Edinburgh. 9.
1933. WILSON, JAMES PEARSON, Privick Mill, Ayr.
1934. WILSON, Captain MATRICE J. H., The Queen's Own Cameron Highlanders, Ashmore, Bridge of Cally, Perthshire.
1932. WILSON, P. DOUGLAS, M.Inst.C.E., Executive Engineer, Public Works Department, Hong Kong.
- 1927.*WILSON, ROBERT, 139 Princes Street, Edinburgh. 2.
- 1923.*WILSON, Rev. S. GORDON F., M.A., B.Litt., A.K.C., F.R.Hist.S., Blean Vicarage, near Canterbury, Kent.
1913. WILSON, Rev. THOMAS, B.D., D.D., The Manse of St Mary of Wedale, Stow, Midlothian.
1916. WINDGIST, Mrs ESTHER (no address).
1920. WISHART, DAVID, Pittarrow, Abernethy, Perthshire.
- 1934.*WISHART, FREDERICK, 193 Great Western Road, Aberdeen.
1929. WOLFENDEN, Ex-Provost WILLIAM, J.P., Duke of Gordon Hotel, Kingussie, Inverness-shire.
1930. WRIGHT, ALEXANDER, L.R.I.B.A., "Creggans," Buchanan Street, Milngavie.
1927. WRIGHT, Rev. WILLIAM, M.A., B.D., Minister of the Parish of Wardlawhill, 21 Clincarthull, Rutherglen.
1925. WYNESS, J. FENTON, A.R.I.B.A., A.I.Archts.Scot., 25 Belmont Street, Aberdeen.
1926. YOUNG, EDWARD DRUMMOND, 27 Castle Terrace, Edinburgh. 1.
1933. YOUNG, ROBERT STORER, J.P., Solicitor, Kinross.
1913. YOUNG, THOMAS E., W.S., Auchterarder.
1934. YOUNG, T. P. W., A.R.I.B.A., 95 Bath Street, Glasgow, C. 2.
- 1924.*YOUNGER, HARRY J., 21 Douglas Crescent, Edinburgh. 12.
1929. YOUNGER, Mrs J. P., Arnsbrae, Cambus, Clackmannanshire.
- 1912.*YULE, THOMAS, W.S., 16 East Claremont Street, Edinburgh. 7,—*Vice-President*.

SUBSCRIBING LIBRARIES, ETC.

American Philosophical Society.	John Rylands Library, Manchester.
Ashmolean Museum, Oxford.	National Museum of Wales, Cardiff.
Birmingham Public Libraries—Reference Library.	New York Public Library, New York.
Carnegie United Kingdom Trust—The Scottish	Pennsylvania Historical Society, Philadelphia,
Central Library for Students, Dunfermline.	U.S.A.
Chicago University Library, Chicago, U.S.A.	Public Library, Aberdeen.
Cleveland Public Library, Ohio, U.S.A.	Public Library, Dundee.
*Columbia University.	Public Library of Victoria, Melbourne, Australia.
Department of British and Mediæval Antiquities,	Reform Club, Pall Mall, London, S.W. 1.
British Museum.	State Historical Society of Wisconsin, Madison,
Detroit Public Library, Detroit, U.S.A.	Wisconsin, U.S.A.
Dr Hay Fleming Library, The University, St	*Stornoway Public Library, Island of Lewis.
Andrews.	University College, Dublin.
*Faculty of Procurators' Library, Glasgow.	University Library, Leeds.
Falkirk Archæological and Natural History Society.	University of Michigan, Ann Arbor.
Free Public Library, Boston, Massachusetts,	University of Minnesota, U.S.A.
U.S.A.	University of Pennsylvania, Philadelphia, Pa.,
Harvard College, U.S.A.	U.S.A.
Henry E. Huntington Library and Art Gallery,	Victoria University of Manchester.
San Marino, California, U.S.A.	Yale University Library, New Haven, Connecticut,
Institute of Accountants and Actuaries in Glasgow.	U.S.A.
Jesus College, Oxford.	

LIST OF THE CORRESPONDING MEMBERS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

NOVEMBER 30, 1935.

- | | |
|---|--|
| 1923. BLACK, GEORGE F., Ph.D., New York Public Library, New York City, U.S.A. | 1915. MATHIESON, JOHN, F.R.S.E., 42 East Claremont Street, Edinburgh. 7. |
| 1927. BREMNER, SIMON, Mid Town, Freswick, Caithness. | 1915. MORRISON, MURDO, Lakefield. Bragar, Lewis. |
| 1928. FORTUNE. JOHN ROBERT, Airhouse, Oxtou, Berwickshire. | 1924. MCIR. WILLIAM T., Brenda, Evie. Orkney. |
| 1913. FRASER, JOHN, 7 East Hermitage Place. Leith, Edinburgh. 6. | 1931. SMITH, SAMUEL, Munrills, Laumeston, near Falkirk. |
| 1913. LEVY, Mrs N. (no address). | 1921. URQUHART, ANDREW, M.A.. J.P. (no address). |
| 1933. MANN. ALEXANDER, 22 Boyd Street, Laurieston, Falkirk. | 1933. YORSTON, JAMES, Hullion, Rousay, Orkney. |

LIST OF HONORARY FELLOWS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1935.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1897.

Sir W. M. FLINDERS PETRIE, D.C.L., LL.D., F.B.A., F.R.S., Edwards Professor of Egyptology
in University College, London, W.C. 1.

1908.

Sir ARTHUR JOHN EVANS, M.A., D.C.L., Youlbury, near Oxford.
Professor H. DRAGENDORFF, Freiburg i. Baden, Johan von Weirthstrasse 4.

1919.

LÉON COUTIL, Correspondant du Ministère de l'Instruction Publique, etc., etc., Les Andelys,
Eure, France.
5 RENÉ CAGNAT, Secrétaire Perpétuel de l'Académie des Inscriptions et Belles Lettres, Professeur
au Collège de France, Palais de l'Institut (3 rue Mazarine), Paris.

1923.

M. L'ABBÉ H. BREUIL, D.L.C., Professeur au Collège de France et à l'Institut de Paléontologie
Humaine, Paris, 52 Avenue de la Motte Piquet, Paris, XV^e.
Professor FRANZ CUMONT, 19 Corso d'Italia, Rome.
Sir G. F. HILL, K.C.B., M.A., LL.D., F.B.A., Litt.D., F.S.A., Director of the British Museum,
London, W.C. 1.

FRANK GERALD SIMPSON, M.A., 45 Fern Avenue, Jesmond, Newcastle-upon-Tyne.

- 10 Mrs ARTHUR STRONG, C.B.E., Litt.D., LL.D., F.S.A., Life-Fellow of Girton College, Cambridge, and Assistant Director of the British School at Rome, 35 Via Balbo, Rome (22).
A. M. TALLGREN, Professeur Universitetet, Helsingfors, Finland.

1926.

MARCELLIN BOULE, Professor in the Muséum National d'Histoire Naturelle, and Director of the Institut de Paléontologie Humaine, 1 rue René Panhard, boulevard Saint-Marcel, Paris 13^e.

Professor Dr philos A. W. BRØGGER, Bestyrer av Universitetets Oldsaksamling, Tullinløkken, Oslo, Norway.

O. M. DALTON, M.A., F.B.A., Uplands, Bathwick Hill, Bath.

- 15 Professor Dr ERNST FABRICIUS, Geheimer Rat, Goethestrasse 44, Freiburg im Breisgau, Germany.
Sir ARTHUR KEITH, M.D., D.Sc., LL.D., F.R.C.S. (Eng.), F.R.S., Conservator of the Museum and Hunterian Professor, Royal College of Surgeons of England; Past-President of the Royal Anthropological Institute of Great Britain and Ireland, and of the Anatomical Society.
Master of the Buckston Browne Farm, Downe, Farnborough, Kent.
Dr R. PARIBENI, Director of the Institute of Archæology of Rome, Museo Nazionale Romano, Rome.

1927.

DON HERMILIO ALCALDE DEL RIO, Torrelavega, Santander, Spain.

1931.

Mrs M. E. CUNNINGTON, 33 Long Street, Devizes, Wiltshire.

- 20 Professor Dr ROBERT ZAHN, Director bei den Staatlichen Museen, Honorar-professor an der Universität, Am Lustgarten, Berlin, C.2.

1933.

Professor Dr phil. HAAKON SHETELIG, Bergens Museums Oldsamling, Bergen, Norway.

LIST OF THE LADY ASSOCIATES
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1935.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1900.

Miss M. A. MURRAY, Edwards Library, University College, London, W.C. 1.
2 Mrs E. S. ARMITAGE, M.A., Parkhurst, Middlesbrough.

SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

Architectural, Archæological, and Historic Society
 of Chester and North Wales.
 Belfast Natural History and Philosophical Society.
 Berwickshire Naturalists' Club.
 Bristol and Gloucestershire Archæological Society.
 British Archæological Association.
 Buchan Field Club.
 Buteshire Natural History Society.
 Cambrian Archæological Association.
 Cambridge Antiquarian Society.
 Carmarthenshire Antiquarian Society.
 Courtauld Institute of Art.
 Cumberland and Westmorland Antiquarian and
 Archæological Society.
 Derbyshire Archæological and Natural History
 Association.
 Dumfriesshire Natural History and Antiquarian
 Society.
 Edinburgh Architectural Association.
 Edinburgh Geological Society.
 Elgin Literary and Scientific Society.
 Essex Archæological Society.
 Gaelic Society of Inverness.
 Glasgow Archæological Society.
 Hampshire Field Club and Archæological Society.
 Hawick Archæological Society.
 Historic Society of Lancashire and Cheshire.
 Institute of Archæology, Liverpool.
 Kent Archæological Society.
 Orkney Antiquarian Society, Kirkwall.
 Perthshire Society of Natural Science.
 Powys-land Club.
 Royal Anthropological Institute.
 Royal Archæological Institute of Great Britain
 and Ireland.
 Royal Commission on Ancient and Historical
 Monuments of Scotland.
 Royal Commission on the Ancient and Historical
 Monuments and Constructions in Wales and
 Monmouthshire.

Royal Historical Society.
 Royal Institute of British Architects, London.
 Royal Irish Academy.
 Royal Numismatic Society.
 Royal Society of Antiquaries of Ireland.
 Scottish Ecclesiological Society.
 Shropshire Archæological Society.
 Society for the Promotion of Roman Studies.
 Society of Antiquaries of London.
 Society of Antiquaries of Newcastle-upon-Tyne.
 Somersetshire Archæological and Natural History
 Society.
 Stirling Natural History and Archæological Society.
 Surrey Archæological Society.
 Sussex Archæological Society.
 Third Spalding Club.
 Thoresby Society.
 Viking Society for Northern Research.
 Wiltshire Archæological Society.
 Yorkshire Archæological Society.

Archæological Survey of India.
 British School at Rome.
 Colombo Museum, Ceylon.
 Provincial Museum, Toronto, Canada.
 Royal Canadian Institute, Toronto.
 University Museum, Dunedin, New Zealand.

FOREIGN SOCIETIES, UNIVERSITIES, MUSEUMS, &c.

Académie des Inscriptions et Belles Lettres, Paris.
 Académie des Sciences d'Ukraine, Kieff.
 Administration des Monuments, Riga, Lettonie.
 Alterthumsgesellschaft, Königsberg.
 Anthropologische Gesellschaft, Vienna.
 Antiquarische Gesellschaft, Zurich.
 Archæological Institute of the Imperial University
 of Kyoto, Japan.

- Archäologisches Institut des Deutschen Reiches
Römisch-Germanische Kommission, Frankfurt
am Main.
- Associació Catalana d'Antropologia, Etnologia i
Prehistòria, Barcelona Universitat, Spain.
- Bosnisch-Herzegovinisches Landes-Museum, Sara-
jevo.
- Bureau of Ethnology, Washington.
California University.
- Commissione Archeologica Comunale di Roma.
- Cornell University Library, Ithaca, New York.
- Csl. státní archéologický ústav (Institut archéolo-
gique de l'Etat tchécoslovaque) Praha, Re-
publika československá.
- Deutsch-ausländischer Buchtausch, Berlin.
- Department of Antiquities in Palestine, Jerusalem.
- Ecole d'Anthropologie de Paris.
- Faculté des Sciences de Lyon.
- Field Museum of Natural History, Chicago.
- Foreningen til Norske Fortidsminde-
Bevaring.
- Gesellschaft für Nützliche Forschungen, Trier.
- Göteborg och Bohuslans Fornminnesföreningen.
- Göttingen University.
- Historische und Antiquarische Gesellschaft, Basel.
- Historischer Verein für Niedersachsen.
- Institut Archéologique Bulgare, Sofia.
- Institut de Paléontologie Humaine, Paris.
- Junta Para Amphiación de Estudios—Comision de
Investigaciones Paleontológicas y Prehistóricas,
Madrid.
- Junta Superior de Excavaciones y Antigüedades,
Madrid.
- Kiel University.
- Kongelige Norske Videnskabers Selskab, Trondhjem.
- Landesmuseum Nassauischer Altertümer zu Wies-
baden.
- Leipzig University.
- Musée Archéologique Erasie Majewski de la Société
des Sciences de Varsovie, Poland.
- Musée d'Art et d'Histoire, Geneva, Switzerland.
- Musée Guimet, Paris.
- Musée National Suisse à Zurich.
- Museum, Bergen, Norway.
- Museum of Northern Antiquities, Oslo.
- National Bohemian Museum, Prague, Czecho-
Slovakia.
- National Museum, Zagreb, Yugoslavia.
- Nordiska Museet, Stockholm.
- Norsk Folkemuseum, Oslo, Norway.
- Oslo University, Norway.
- Peabody Museum, Cambridge, Mass., U.S.A.
- Prähistorische Kommission der Akademie der
Wissenschaften in Wien.
- Reale Accademia Nazionale dei Lincei, Rome.
- Rijks-Museum van Oudheden, Leiden.
- Römisch-Germanisches Central Museum, Mainz, Ger-
many.
- Royal Academy of History and Antiquities,
Stockholm.
- Royal Society of Northern Antiquaries, Copenhagen.
- Servicio de Investigación Prehistórica de la Excm.
Diputación Provincial de Valencia.
- Smithsonian Institution, Washington, U.S.A.
- Società Romana di Antropologia, Rome.
- Société d'Anthropologie de Paris.
- Société des Antiquaires de l'Ouest.
- Société Archéologique d'Alexandrie.
- Société Archéologique de Constantine, Algeria.
- Société Archéologique du Midi de la France.
- Société Archéologique de Montpellier.
- Société Archéologique de Moravie.
- Société Archéologique de Namur.
- Société des Bollandistes, Brussels.
- Société des Sciences de Semur (*Pro Alesia*).
- Société Finlandaise d'Archéologie, Helsingfors.
- Société d'Histoire et d'Archéologie de Gand.
- Société Nationale des Antiquaires de France.
- Société Préhistorique Française, Paris.
- Société Préhistorique Polonaise.
- Société Royale d'Archéologie, Bruxelles.
- Städtisches Museum für Volkerkunde, Leipzig.
- Stavanger Museum, Stavanger, Norway.
- University Library, Tartu, Esthonia.
- Upsala University.
- Verein für Nassauische Alterthumskunde, Wies-
baden.
- Verein von Alterthumsfreunden im Rheinlande, Bonn.
- Wiener Præhistorische Gesellschaft.

PERIODICALS.

- L'Anthropologie*, Paris.
- Bulletin archéologique polonais*, Warsaw.

LIBRARIES, BRITISH.

- Athenæum Club Library, London.
- Baillie's Institution, Glasgow.
- Bodleian Library, Oxford.

British Museum Library.
 Chetham's Library, Manchester.
 Church of Scotland College Library, The Mound,
 Edinburgh.
 Free Library, Edinburgh.
 Free Library, Liverpool.
 Mitchell Library, Glasgow.
 National Library of Scotland, Edinburgh.
 National Library of Wales, Aberystwyth.
 Ordnance Survey Library, Southampton.
 Public Record Office Library, London.
 Royal Library, Windsor.
 Royal Scottish Museum Library, Edinburgh.
 Scottish National Portrait Gallery Library.
 Scottish Record Office, Historical Department.
 Signet Library, Edinburgh.
 Trinity College Library, Dublin.
 University Library, Aberdeen.

University Library, Cambridge
 University Library, Edinburgh.
 University Library, Glasgow.
 University Library, St Andrews.
 Victoria and Albert Museum Library, London.

LIBRARIES, FOREIGN.

Bayerische Staats-bibliothek, Munich, Bavaria.
 Bibliothèque d'Art et d'Archéologie. Université de
 Paris.
 National Library, Paris.
 National Library, Vienna.
 Newberry Library, Chicago, U.S.A.
 Preussische Staats-bibliothek, Berlin.
 Public Library, Hamburg.
 Royal Library, Copenhagen.
 Royal Library, Stockholm.
 Sächsische Landes-bibliothek, Dresden.

PROCEEDINGS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND

HUNDRED AND FIFTY-FIFTH SESSION, 1934-1935

ANNIVERSARY MEETING, 30th November 1934.

JAMES CURLE, LL.D., W.S., in the Chair.

W. T. Ketchen, W.S., and the Rev. William Burnett, B.D., were appointed Scrutineers of the Ballot for Office-Bearers.

The Ballot having been concluded, the Scrutineers found and declared the List of the Council for the ensuing year to be as follows:—

President.

Sir GEORGE MACDONALD, K.C.B., LL.D., D.Litt., F.B.A.

Vice-Presidents.

The Hon. LORD ST VIGEANS.

FRANCIS J. GRANT, C.V.O., LL.D., Lord Lyon King of Arms.

Sheriff C. H. BROWN, K.C.

2 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1934.

Councillors.

The Hon. Sir HEW H. DALRYMPLE, K.C.V.O.	{ <i>Representing the Board of Trustees.</i>	Professor T. H. BRYCE, M.D., F.R.S.
JOHN WARRACK, LL.D.		WILLIAM ANGUS.
JOHN A. INGLIS.	{ <i>Representing the Treasury.</i>	Brigadier-General Sir ROBERT GILMOUR, Bart., C.B., C.V.O., D.S.O.
THOMAS YULE, W.S.		Major-General Sir WALTER OGILVIE, K.B.E., C.B., C.M.G.
WILLIAM K. DICKSON, LL.D.		IAN C. HANNAH, M.A.
H. H. MACKENZIE.		

Secretaries.

DOUGLAS P. MACLAGAN, W.S. | W. MACKAY MACKENZIE, D.Litt.

For Foreign Correspondence.

Professor V. GORDON CHILDE, B.Litt. | Professor W. M. CALDER, M.A., LL.D.,
| F.B.A.

Treasurer.

J. BOLAM JOHNSON, C.A.

Curators of the Museum.

JAMES CURLE, LL.D., W.S. | JAMES S. RICHARDSON.

Curator of Coins.

ROBERT KERR, M.A.

Librarian.

ALEXANDER O. CURLE, C.V.O.

A Ballot having been taken, the following were elected Fellows:—

Rev. JOHN ANDERSON, Sconser, Portree, Isle of Skye.
JOHN RICHARD CUNNINGHAM, C.I.E., Askomil End, Campbeltown, Argyll.
DOUGLAS STANLEY DICKSON, LL.B., 8 Clarence Drive, Hyndland, Glasgow.
Rev. ALBAN HEATH, The Mansion, Brooks Hill, Harrow Weald Park, Middlesex.
Mrs MABEL DAISY HENDERSON, 20 High Street, Carnoustie, Angus.
Dr WILLIAM JOHN LEACH, Eilleandonan, Beaulieu.

Rev. WILLIAM ERIC McIVER, Th.D., The Vicarage, Beeac, Victoria, Australia.

R. F. B. MACKAY, B.A. (Cantab.), F.R.A.I., Glencruitten, Oban, Argyll.

KENNETH MACRAE, Applecross, Ross-shire.

Miss CECIL LOUISA MOWBRAY, 5 Melville Terrace, Stirling.

EDWARD RICHMOND PATON, B.A. (Cantab.), F.Z.S., M.B.O.U., of Hareshawmuir, *via* Kilmarnock, Ayrshire.

THOMAS SMELLIE, Architect, 46 Portland Road, Kilmarnock.

Rev. WILLIAM MAGEE TUKE, Kilmore, Bridge of Allan.

MAURICE J. H. WILSON, Captain, The Queen's Own Cameron Highlanders, Ashmore, Bridge of Cally, Perthshire.

T. P. W. YOUNG, A.R.I.B.A., 95 Bath Street, Glasgow, C. 2.

The Secretary read the list of Members deceased since the last Annual Meeting:—

Honorary Fellow.

Elected.

Dr SOPHUS MÜLLER, Secretary of the Royal Society of Northern Antiquaries, and Director of the National Museum, Copenhagen . . . 1897

Corresponding Member.

JOHN NICOLSON, Nybster, Auchengill, by Wick, Caithness . . . 1911

Fellows.

Sir RALPH W. ANSTRUTHER, Bart., Balcaskie, Pittenweem . . . 1900

Captain HARRY ARMITAGE, late 15th Hussars, The Grange, North Berwick . . . 1914

JOHN CAMERON BLACK, J.P., Naval Architect, 45 West Nile Street, Glasgow, C. 1. (Life Member) . . . 1927

PETER ROSS BRYCE, 33 Craigmillar Park, Edinburgh . . . 1908

HENRY M. CADELL, B.Sc., LL.D., F.R.S.E., Grange, Linlithgow . . . 1908

JAMES S. DONALD, 16 Scott Street, Perth . . . 1919

WILLIAM GIBSON, M.A., 292 Via Nomentana, Rome . . . 1903

WILLIAM GILLIES, LL.D., 23 University Gardens, Glasgow . . . 1916

JAMES TENNANT GORDON, O.B.E., Chief Constable of Fife and Kinross, Sandilands, Cupar, Fife . . . 1909

Rev. JOHN HORNE, Norland, Longbank Road, Ayr . . . 1922

Colonel EDWARD J. INCHES, D.L., 88 Princes Street, Edinburgh . . . 1923

ALFRED C. JONAS, Locksley, Tennyson Road, Bognor, Sussex . . . 1898

WILLIAM KENNEDY, Low Gleugyre, Kirkcoln, Stranraer . . . 1924

ANDREW W. KERR, F.R.S.E., 81 Great King Street, Edinburgh . . . 1889

HENRY LAMONT, Cleveland Bank, Luss, Dumbartonshire . . . 1927

R. MURDOCH LAWRENCE, 58 Fountainhall Road, Aberdeen . . . 1925

DAVID LEES, Memus, Victoria Place, Airdrie . . . 1930

R. W. MACFARLANE-GRIEVE, Penchrise Peel, Hawick. (Life Member). . . 1917

Mrs MACINTOSH, 23A Dick Place, Edinburgh . . . 1925

4 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1934.

	Elected.
Baron WILLIAM K. MACKAY, Crakaig, Loth. Sntherland	1933
RODERICK MACLEOD, Glenfeshie House, Beaufort Road, Inverness	1927
JAMES M. M'WALTER, Solicitor, 148 Nethergate, Dundee	1928
WALTER G. NAPIER, M.A., B.Sc., 5 Sciennes Gardens, Edinburgh	1924
The Right Hon. VISCOUNT NOVAR, of Raith and Novar, K.T., G.C.M.G., LL.D., Raith, Kirkcaldy	1899
ALEXANDER PARK, Ingleside, Lenzie	1903
THOMAS SMITH PEACE, Architect, Junction Road, Kirkwall	1891
WILLIAM SINCLAIR POLSON, 17 Craigmillar Road, Langside, Glasgow	1927
Sir JOHN ROBERTS, K.C.M.G., Littlebourne House, Dunedin, New Zealand	1905
ROBERT ROBERTSON, Holmlea, Dollar. (Life Member)	1886
Sir JOHN S. SAMUEL, K.B.E., 13 Park Circus, Glasgow	1911
The Hon. LORD SANDS, LL.D., D.D., 4 Heriot Row, Edinburgh	1905
Rev. G. AIRD SIM, South Church Manse, Ochiltree, Ayrshire	1913
Professor JAMES YOUNG SIMPSON, D.Sc., F.R.S.E., 25 Chester Street, Edinburgh	1919
JOHN SMITH, Eildon, Newtown St Boswells	1930
T. S. THOMSON, 18 Rothesay Place, Edinburgh	1921
Sir MICHAEL GRIEVE THORBURN, Glenormiston, Innerleithen	1898
Rev. G. ELMSLIE TROUP, M.A., 22 Hermitage Drive, Edinburgh	1927
EDWIN WARD, Director of the Royal Scottish Museum, 30 Walker Street, Edinburgh	1921
PERCIVAL WAUGH, 98 Polwarth Terrace, Edinburgh	1920
J. R. WOOD, 51 Clouston Street, Kelvinside N., Glasgow	1922

The Meeting resolved to record their sense of the loss the Society had sustained in the death of these members.

The Secretary read the following Report by the Council on the affairs of the Society:—

The Council herewith submit to the Fellows of the Society their Report for the year ending 30th November 1934.

Fellowship.—The total number of Fellows on the roll at 30th November 1933 was 1055
At 30th November 1934 the number was 1049

being a decrease of 6

One Honorary Fellow and one Corresponding Member have died. During the year 58 new Fellows were added to the roll, while 40 died, 9 resigned, 16 allowed their membership to lapse, and 1 Fellow was reponed.

With the death of Dr Sophus Müller a distinguished member drops out of the limited list of Honorary Fellows. Dr Müller was Director of the National Museum, Copenhagen, and Secretary of the Royal Society of Northern Antiquaries. His book on Animal Ornament in the North brought him a wide reputation, and his volumes devoted to the classification of Danish antiquities must always hold place as a work of reference.

Mr John Nicolson, Corresponding Member, was one of the best-known men in his native county of Caithness. From an early age he showed himself possessed of a remarkable talent for painting and draughtsmanship. Indeed, a career as an artist was at one time contemplated for him. Though this idea was ultimately abandoned, throughout his life he made use of his pencil and brush when occasion arose, and even showed that he could wield the sculptor's chisel to good purpose. A farmer by profession, he was an antiquary and an artist at heart, and such was his local reputation that he was the first to be informed of any fresh discovery in the county. Under the direction of Sir Francis Tress Barry, then the tenant of Keiss Castle, he conducted the excavation of numerous brochs in the neighbourhood of Keiss, and, on his own initiative, investigated various sites of less importance with the spade. He was gifted with an attractive personality and a fine sense of humour, which made him an engaging companion with whom to explore any of the antiquities of his neighbourhood. He was elected a Corresponding Member in 1911, and was instrumental in bringing various finds to the notice of the Society, himself presenting a number of valuable relics to the Museum.

Among the Fellows who have died during the year there are a few of whom the Council desire to make special mention.

Dr H. M. Cadell of Grange was best known as a geologist and geographer, these sciences supplying the material for his best-known books, such as *The Story of the Forth*. But he also extended his investigations into the archaeological field. He was elected a Fellow in 1908.

Mr J. Tennant Gordon, O.B.E., J.P., took a lifelong interest in Scottish archaeology. As a member of the Banffshire Field Club he excavated and described a cairn on the Hill of Foulzie, Banffshire, which yielded an interesting group of Bronze Age pottery. After his appointment as Chief Constable of Fife he became a Fellow of the Society in 1909, and, though unable to attend many of the meetings, he took a keen interest in its work. He assisted in securing some important relics for the Museum, and contributed to the *Proceedings*.

Mr Robert Murdoch Lawrance, Aberdeen, who was well known for his writings on biographical and bibliographical subjects, had been a Fellow since 1925.

Lord Novar became a Fellow so long ago as 1899. He was a man of great charm of manner and of rare intellectual life, deeply interested in the history of his native country and widely read in general literature. Much of his active life was devoted to the public service, his tenure of the Governor-Generalship of Australia during the War being specially memorable. At a later period he was Secretary for Scotland. In so busy a career there was little room for the exercise of antiquarian tastes, but he served for several years as a member of the Royal Commission on Ancient and Historical Monuments in Scotland.

Mr Alexander Park, Lenzie, who became a Fellow in 1903, will long be remembered for the active and helpful interest he showed in the exploration of the Antonine Wall. He was the last surviving member of the Committee of the Glasgow Archæological Society which was responsible for the well-known *Report*, and his personal contribution to the practical side of the Committee's work was invaluable. Afterwards he was intimately associated with the investigation and description of the Roman Fort on Bar Hill. To the very end of his long and active life he continued to be keenly interested.

Lord Sands was a very prominent figure in Edinburgh, not only as a Judge of the Court of Session but as a man of strong character and of many general interests, including archæology. He was elected a Fellow in 1905, and, although he could never spare time to contribute to the *Proceedings*, frequently attended the meetings. His versatility was remarkable, and not less so was the extraordinarily high ideal of public duty which he kept before himself with unwavering consistency. Notable as were his services in such important positions as Chairman of the Carnegie Trust, they were overshadowed by the part he played in bringing about the Union of the Church of Scotland. It is not too much to say that in that he made history.

Proceedings.—An advance copy of the *Proceedings* lies upon the table. The number of papers read was twenty-five. Of these, fifteen dealt with prehistoric subjects and ten with historic subjects.

The Museum.—The number of acquisitions during the year was 402, of which 321 were donations and 81 purchases. These numbers are quite satisfactory. Although, perhaps, not so large as usual, they include some very important objects.

Special interest attaches to the relics found by the donor, Mr Walter G. Grant, F.S.A.Scot., in two Stone Age burial monuments—the Midhowe Cairn and the Knowe of Yarso—in the island of Rousay. These consist

largely of typical pottery of the Unstan type, and of flint implements. Mr John R. Fortune, Corresponding Member, has followed up his previous donations by presenting more flint implements found on his farm of Airhouse, Lauderdale.

The outstanding additions assignable to the Bronze Age are a gold penannular armlet with expanded cup-shaped terminals, presented by Mrs De Pree, and a copper sun-disc with its covering of thick gold foil, a penannular ring of hollow triangular section, and a dress-fastener of gold, believed to have been found together in Mull, and known to have belonged to Sir Walter Scott. These were purchased, as were also a flat axe of copper from Doune Hill, Dunbar, and another of bronze from Brockloch, Kirkcudbrightshire; while a socketed example, found in the River Teith at Callander, was presented by Provost Haggart, O.B.E., F.S.A.Scot. The extensive collections of pottery of this period have been augmented by the donation of two cinerary urns from Monklaw, near Jedburgh, by the Marquess of Lothian, another from Blackburn Mill, Berwickshire, by Mr George Taylor, Cockburnspath, and of a food-vessel and a jet button, found in a cist in a garden at Oxfangs Road, Edinburgh, by Dr Henry Tod, jun., as well as by the purchase of two beakers from the Skene district of Aberdeenshire.

The relics found by Professor V. Gordon Childe at the native fort at Earnsheugh, Berwickshire, have been handed over to the Museum by Mr W. G. Burn-Murdoch, and those recovered by Mr W. Lindsay Scott from the cave at Rudh'an Dunain, Skye, have been presented by Sir Reginald Macleod of Macleod. A valuable group, including a sword and an axe, disinterred from a Viking grave at Ballinaby, Islay, came from Mr Angus M'Lachlan. The very fine symbol-stone discovered many years ago at Easterton of Roseisle, Morayshire, has been gifted by the Misses Young of Burghead, and another found a few years ago at Invereen, Invernessshire, by Mackintosh of Mackintosh. A fine sculptured slab, bearing the figure of a man on horseback, which came to light at Bullion, Invergowrie, Angus, has been transferred to the Museum by the County Council of Angus. This last monument is of a type quite new to Scottish Archæology. The generosity of Mr W. E. F. Macmillan is responsible for a welcome addition to the collection of casts of West Highland grave-slabs. He has had reproduced for the Museum eight stones in the old kirkyard at Kilmory Knap, Argyll.

The Library.—The additions to the Library amounted to 152 by donation and 28 by purchase. As usual, a large number of publications by learned societies, etc., were received by way of exchange for our

8 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1934.

Proceedings and by subscription. More than 450 volumes have been bound with the help of the special grant from H.M. Treasury.

The Rhind Lectureship.—The Rhind Lectures for 1934 were delivered in the beginning of November by Mr Ian A. Richmond, the subject being “Augustan Civilisation in Western Europe.” The Lectureship for 1935 has been accepted by Mr E. Thurlow Leeds of the Ashmolean Museum, Oxford, who will lecture on the “Anglo-Saxons in Great Britain.” and that for 1936 by Professor P. Bosch Gimpera, Barcelona. whose subject will be “The Archæology of the Iberian Peninsula.”

The Gunning Fellowship.—The Gunning Fellowship for 1934 was conferred on Mr A. J. H. Edwards, Assistant Keeper of the Museum, to enable him to visit museums in the north of Germany.

The Chalmers-Jervise Prize.—The districts selected for the Chalmers-Jervise Prize Essay for 1934 were Angus and Kincardine. Five essays were received, and the prize was awarded to Mr William Fenton, 8 Meet-hill, Alyth, Perthshire, for his essay, “Objects of Prehistoric Antiquity in the County of Angus.”

GEORGE MACDONALD,
President.

NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND,
QUEEN STREET, EDINBURGH.

The Report was adopted on the motion of Mr A. O. Curle, C.V.O., seconded by Mr H. E. Kilbride-Jones.

Mr J. Bolam Johnson, Treasurer, read the annual statement of the Society's funds, which was ordered to be printed and circulated among the members. On the motion of the Chairman, a hearty vote of thanks was accorded to Mr Johnson.

MONDAY, 10th December 1934.

SIR GEORGE MACDONALD, K.C.B., LL.D., F.B.A.,
President, in the Chair.

A Ballot having been taken, the following were elected Fellows:—

Rev. JOHN M'CORMACK CAMPBELL, Tollcross Park Manse, 94 Drumover Drive,
Glasgow, E. 1.

JAMES LUMSDEN, 130 Blenheim Place, Aberdeen.

Rev. JOHN MACLEAN, Manse of Lochalsh, Balmacara, Kyle, Ross-shire.

JAMES MUNNOCH, Controller, G.P.O., Edinburgh, 15 Liberton Drive, Liberton,
Edinburgh, 9.

Rev. A. J. B. PATERSON, M.A., B.Sc., Minister of St James' Church, Rothesay,
St James' Manse, Craigmore, Rothesay.

ISAAC ROSENBLOOM, 5 Palmerston Road, Grange, Edinburgh, 9.

JOHN SMITH, B.Sc., Chief Conservator of Forests, Sudan Government, Birkhill,
Coalburn, Lanarkshire.

Mr James M'Cosh, F.S.A.Scot., exhibited photographs of two Silver Communion Cups of the Kirk of Dalry, Ayrshire. The cups, which are similar, have a shallow bowl, a baluster-shaped stem, and a gadroon border round the foot (fig. 1). They measure $7\frac{1}{16}$ inches in height, $5\frac{1}{16}$ inches in diameter across the mouth of the bowl, and $3\frac{3}{4}$ inches across the foot, the bowl being $1\frac{1}{16}$ inch deep. Under the lip on one side is engraved FOR THE KIRK OF DALRY, and on the opposite side the hall-marks (fig. 2) G K (Gilbert Kirkwood, Maker), a castle for Edinburgh, and I L (John Lindsay, Deacon). Lindsay was deacon for 1617–9, which gives the date of the vessels. At Straiton and Beith, both in Ayrshire, are almost similar cups, two at the former church and one at the latter. Those at Straiton were also made by Gilbert Kirkwood, and the one at Beith bears his mark as deacon (1623–5).

The following Donations to the Museum were intimated, and thanks voted to the Donors:—

(1) By Sir GEORGE MACDONALD, K.C.B., LL.D., F.B.A., President.
First Brass of Titus, found in Partick in 1908.

(2) By Mr FERGUSON, Wood-hill, Carsphairn, by Castle Douglas.

Stone Loom-weight, abraded at one end, measuring $4\frac{5}{16}$ inches by $4\frac{1}{16}$ inches by $2\frac{5}{8}$ inches, perforated near one edge, from Doon Castle, Loch Doon, Ayrshire.

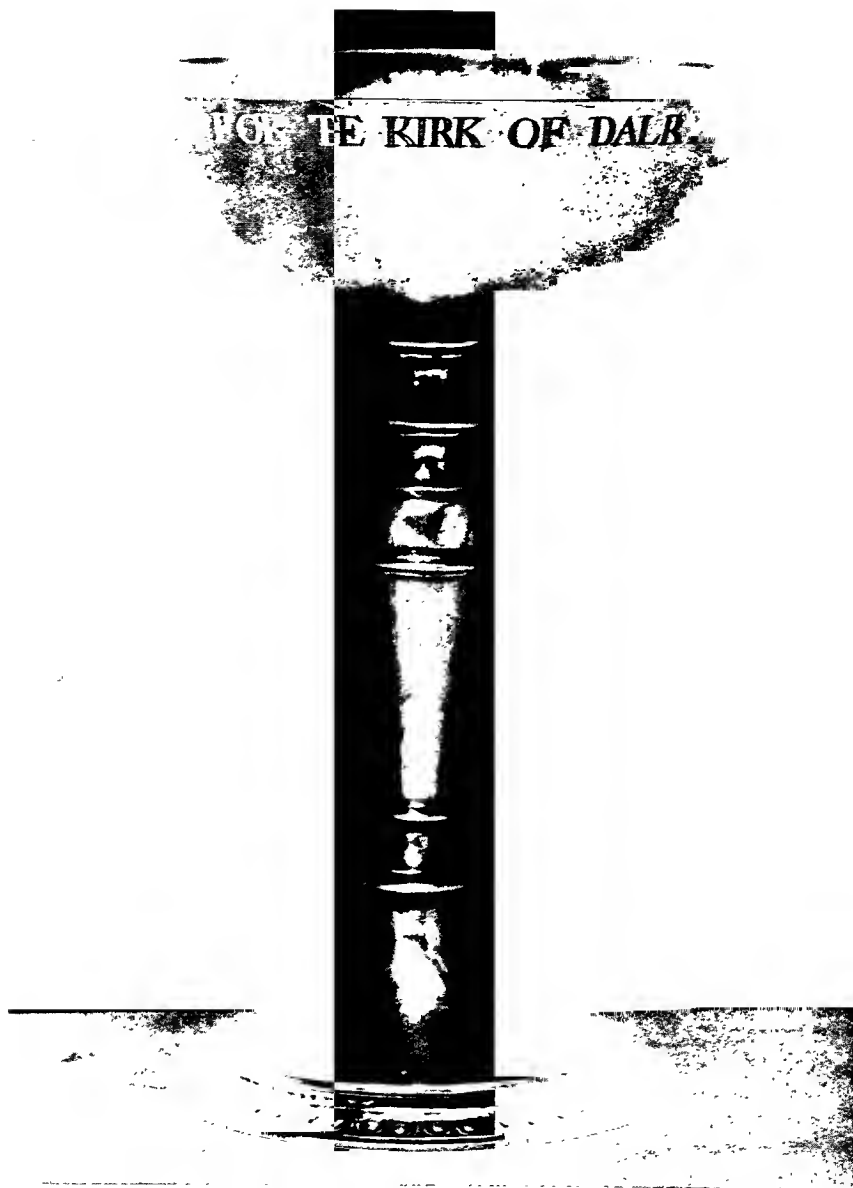


Fig. 1. Communion Cup of the Kirk of Dalry, Ayrshire.

(3) By Mrs T. S. SMITH, 6 South Clerk Street, Edinburgh.

Ladle with Copper bowl and Iron handle, used for measuring barley about a hundred years ago at Mains of Libberton, Lanarkshire. It formed part of a bride's tocher, and belonged to the grandmother of the donor.

(4) By GEORGE TAYLOR, Cockburnspath.

Cinerary Urn of light brown ware, with overhanging rim and concave neck, wanting the base, which was broken off by the plough (fig. 3). It now measures $10\frac{1}{4}$ inches in height, $8\frac{1}{4}$ inches in diameter at the mouth, 9 inches at the foot of the rim, 8 inches at the neck, and $8\frac{5}{8}$ inches at the junction of the neck and lower part. The base has been less than $4\frac{1}{2}$ inches in diameter. The vessel is quite plain. It was found in a low mound about 450 yards south-south-east of Blackburn Mill, Cockburnspath, Berwickshire. It had been placed in an inverted position, full of incinerated human bones, and under it was a pocket of dark material, mixed with very small fragments of burnt bone.



Fig. 2. Hall-marks on Cup (enlarged).

Rim fragment of a Vessel of reddish ware, possibly Neolithic. The rim is rounded on the top and projects outwards. The wall is $\frac{3}{8}$ inch thick, and the diameter of the mouth has been at least 12 inches. The top of the rim bears an incised lattice design. Also a very small wall fragment of a Vessel of red ware, containing much crushed stone, decorated outside with incised herring-bone patterns. These two fragments were found on the surface in the immediate vicinity of the cinerary urn.

(5) By The Right Hon. THE COUNTESS OF CASSILLIS, F.S.A.Scot.
Piece of old Mactaggart Tartan.

(6) By WALTER G. GRANT, F.S.A.Scot.

Flint and Bone Implements and fragments of Pottery from a long stalled Chambered Cairn, the Knowe of Yarso, Rousay, Orkney. (See subsequent communication by J. Graham Callander, LL.D., F.S.A.Scot., and Walter G. Grant, F.S.A.Scot.)

Fragments of Neolithic Pottery and a Flint Knife from a similar cairn at Midhowe, Rousay. (See *Proceedings*, vol. lxviii. p. 335.)

Two small pieces of a Cinerary Urn of Clay, red on the outside and black on the inside, and a Scraper of red Flint, measuring $\frac{13}{16}$ inch by $\frac{5}{8}$ inch, from a plundered burial mound at Quendale, Westness, Rousay.

(7) By A. D. LACAILLE, F.S.A.Scot., the finder.

Leaf-shaped Arrow-head of white Quartz, measuring $1\frac{1}{16}$ inch by $\frac{1}{2}$ inch. found 250 yards south of Shegartan farm steading, Luss, Dumbartonshire.

Scraper of Chalcedony, measuring $\frac{13}{16}$ inch by $1\frac{1}{16}$ inch, and another of Flint, measuring $\frac{3}{4}$ inch by $\frac{15}{16}$ inch. found on Shewalton Moor, Irvine, Ayrshire.



Fig. 3. Cinerary Urn from Blackburn Mill, Berwickshire.

(8) By Master A. N. G. MUNRO, Taynault, Newtown St Boswells, the finder.

Tardenoisian Graver (*burin*) of green Chert, $\frac{1}{2}$ inch in length, from Monksford Field, Dryburgh Mains, Berwickshire.

(9) By Dr FRANCIS M. MILNE, F.S.A.Scot.

Castor-oil Spoon of Pewter, consisting of an elongated bowl covered with a lid, and a hollow stem through which the oil was blown into the patient's throat. From Dundee.

(10) By DAVID MONRO, 35 Barony Street, Edinburgh.

Barrel Padlock of Iron, dredged out of Loch Leven, Kinross-shire.

(11) By A. W. F. CHATFIELD, Costerton Mains.

Food-vessel of brown Clay, restored (fig. 4), measuring $4\frac{1}{8}$ inches in height, $4\frac{3}{4}$ inches in diameter at the mouth, $5\frac{1}{4}$ inches at the shoulder, and $2\frac{1}{2}$ inches at the base. It is surrounded by a raised moulding at the shoulder, $1\frac{1}{8}$ inch below the brim, which is flat and slightly bevelled downwards. From the moulding the wall converges gently to the lip.



Fig. 4. Food-vessel from Costerton Mains, Midlothian.

It is decorated on the top of the brim by two concentric lines of impressed cord patterns, by three similar horizontal lines between the brim and the moulding at the shoulder, and by three below. On the moulding and 1 inch below it are vertical maggot-like impressions. The tapering lower part is covered with vertical impressions of a twisted cord. Found in a short cist 200 yards west of the steading on the farm of Costerton Mains, Blackshiels, Midlothian.

(12) By JOHN DUNNETT. 164 Gorgie Road. Edinburgh.

Stone Hammer, partially made, measuring 4 inches by $2\frac{5}{8}$ inches by $1\frac{3}{4}$ inch, roughly chipped into shape. There is a perforation, 1 inch in diameter, drilled only to a depth of $1\frac{1}{8}$ inch on the top, and picked out to a depth of $\frac{1}{8}$ inch on the under side. Probably found in Caithness.

(13) By Mrs J. M. BANKS. 16 Hornton Court. Kensington, London, W. 8.

Plate of Chinese Porcelain, late eighteenth century, bearing a coat

14 PROCEEDINGS OF THE SOCIETY, DECEMBER 10, 1934.

of arms—three lions rampant; a crest—a hand holding a laurel wreath, above, and the motto *Nobilis est ira leonis*—Ross of Gledfield or Ross of Rowallan. The crest is repeated on the edge of the plate.

(14) By Commander G. E. P. How, F.S.A.Scot.

Flat Ring Brooch of Brass, much corroded, measuring $1\frac{1}{8}$ inch in diameter, with the pin flanged under the hinge loop. It may have borne a talismanic inscription.

Betrothal Finger-ring of Silver, with a large heart-shaped bezel, bearing on the front the initials K MK, and on the back the maker's mark C J, struck twice (Charles Jamieson, Inverness, c. 1800).

Double-heart-shaped Brooch, surmounted by a crown, with the pin looped round for a hinge. It measures $2\frac{3}{8}$ inches in height, and bears the maker's mark A M'L INS (Alex. Macleod, Inverness, c. 1810.)

(15) By WILLIAM MURRAY, Rossie Ochil.

Barbed and stemmed Arrow-head of milky-white Flint, with serrated edges, measuring $1\frac{5}{8}$ inch by 1 inch, found on hill ground to the north-east of the steading on the farm of Rossie Ochil, Forgandenny, Perthshire.

(16) By Miss MELDRUM, 45 Inverness Terrace, London.

Piece of the Cloth of Gold that covered the coffin of King Robert the Bruce in Dunfermline Abbey.

(17) By Dr G. J. R. CARRUTHERS, 4A Melville Street, Edinburgh.

Wooden Protector for the left hand and fingers, used when shearing crops with the sickle in Macedonia.

(18) By Miss A. C. BARR, Portkil Cottage, Kilcreggan.

Old Orkney Arm-chair with plaited straw back.

(19) By WILLIAM KIRKNESS, F.S.A.Scot.

Old Wooden Bed-smoother, measuring 26 inches by 4 inches. On the upper side is carved a man with a sword in his right hand and a book in his left; the top of the bow-handle is carved in the form of a female head and bust. From Edinburgh.

(20) By Mr STEWART, Soutra, through Professor Childe.

Six leaf-shaped and two barbed Arrow-heads of yellow and reddish Flint, found on Soutra Farm, Tannadice, Angus.

(21) By T. D. BATHGATE, F.S.A.Scot., the finder.

Pointed and socketed Implement of Deer-horn, the socket imperfect, measuring $4\frac{3}{16}$ inches in length.

• •

Pointed Tine of Deer-horn and pointed Implement of Bone, measuring $2\frac{3}{8}$ inches and $2\frac{3}{16}$ inches in length.

Handle of Deer-horn with imperfect socket, measuring $3\frac{13}{16}$ inches in length.

From the Broch of Cogle, Watten, Caithness.

(22) By L. H. FORSYTH, 3 Craighall Crescent, Leith.

Five Communion Tokens.

(23) By DAVID DOUGLAS, 6 Broughton Street, Edinburgh.

Half of a melon-shaped Bead of blue Faience from Newstead Roman Fort.

(24) By W. G. BURN-MURDOCH of West Loch.

Relics found in the fort at Earn's Heugh, Berwickshire. (See *Proceedings*, vol. lxvi. p. 179.)

(25) By Sir REGINALD MACLEOD of Macleod.

Relics found in the Cave at Rudh'an Dunain, Skye. (See *Proceedings*, vol. lxviii. p. 211.)

(26) By RAIMONDO N. DE PINTO. F.S.A.Scot.

Bead Purse with steel clasp.

Bronze Medal commemorating the Tercentenary of South Leith Parish Church. 1609-1909.

Brass Badge of Plasterers' Society.

(27) By MURDO MORRISON. J.P., Corresponding Member.

Barbed and stemmed Arrow-head of white Flint, measuring $1\frac{5}{8}$ inch by $\frac{13}{16}$ inch, and Stone Axe, imperfect, measuring 5 inches by $2\frac{1}{2}$ inches by $1\frac{1}{4}$ inch, found at the kitchen-midden at Bragar, Lewis, by the donor.

(28) By Professor THOMAS H. BRYCE, M.D.. F.R.S.. F.S.A.Scot.

Mould of Steatite for casting a hemispherical object with six projections, one in the centre and five round it, measuring $1\frac{7}{16}$ inch by $1\frac{1}{4}$ inch by $\frac{11}{16}$ inch, and half of a Whorl of Steatite, measuring $1\frac{5}{16}$ inch in diameter and $\frac{5}{16}$ inch in thickness, found beside a heel-shaped cairn on the hill above Dale Voe, Shetland.

(29) By THE COUNTY COUNCIL OF ANGUS.

Oblong Slab of red Sandstone, measuring 6 feet 2 inches in height, 2 feet 5 inches in breadth, and $5\frac{3}{4}$ inches in thickness, bearing on one face, in a sunk panel, the figure of a bearded, bareheaded man on horseback,

facing right, carrying a sword and circular shield, and drinking out of an ox-horn, the tip of which is carved in the form of an eagle's head, all sculptured in relief. Found at Bullion, immediately west of Invergowrie, Angus, while cutting through a gravelly ridge in making the new by-pass roadway round Dundee. The stone was found about 3 feet under the surface in soil at its junction with the underlying gravel, near the highest point in the ridge and near the present western side of the new road. (See subsequent communication by J. Graham Callander, LL.D.)

(30) By WILLIAM E. F. MACMILLAN, F.S.A.Scot.

Eight plaster Casts of Sculptured Slabs of bluish schist in the Kirkyard of Kilmory Knap, Argyll.

Grave-slab, measuring 6 feet 4 inches in length, 1 foot 11 inches in breadth at the top, and 1 foot 5 inches at the bottom (fig. 6, No. 2). In a large panel bordered by three mouldings, the outer one showing large loops at the top and bottom and the central one dog-toothed, is a man in armour, and animal and foliaceous designs. The armed figure, which consists of a man dressed in a jupon and with a conical basinet on his head, standing with his right hand holding a spear, the butt of which rests on the ground, and his left grasping the hilt of his sword, is placed within a niche near the top of the slab. On the right of the niche are foliaceous designs which are interlaced at the top and terminate in two griffin-like heads. Immediately below the niche are two animals with long, erect ears and their tails running into interlaced foliaceous designs below. Under these is a hunting scene showing dogs chasing a deer.

Grave-slab, measuring $6\frac{1}{4}$ inches in length, 1 foot 11 inches across the top and 1 foot 5 inches across the foot (fig. 5, No. 2). It is bordered by two flat mouldings with a rounded bead between and a row of pateræ outside. On the inner moulding are traces of an inscription which is now indecipherable. At the top is a foliaceous and interlaced cross, the leafage taking the form of rosettes. Under this is a casket with a comb showing a bird on the back, and a pair of shears below on the left side, and an animal and a circular disc, perhaps a plate, on the right side. The lower half of the stone is occupied on the left by a holly-leaf pattern springing from the tail of a beast at the top and ending in another animal at the foot, and, on the right, by running whorls of foliage springing from the tail of an animal at the top.

Grave-slab, measuring 5 feet $5\frac{1}{4}$ inches in length, 1 foot $9\frac{1}{4}$ inches in breadth at the top and 1 foot $7\frac{1}{4}$ inches at the bottom, with a flat moulding running round the sides and ends (fig. 5, No. 3). At the top is a foliaceous

cross, and below it, in the centre, a claymore with a rayed pommel and depressed quillons with pear-shaped terminals. On both sides of the sword are foliaceous whorls springing from two wavy intertwined stems with a



Fig. 5. Grave-slabs at Kilmory Knap, Argyll.

shallow groove along their centre. The foliage on the right side runs into the tail of a beast opposite the hilt of the sword, but the counter-balancing space on the left is occupied by a rectangular object and two axes, and also an inscription which is almost illegible. Along the blade of the sword is a second inscription, very much worn.

Grave-slab, measuring 5 feet $10\frac{1}{2}$ inches in length, 1 foot 6 inches in breadth at the top and 1 foot 3 inches at the foot, bordered with two

flat mouldings with a bead between (fig. 5, No. 1). The upper half is decorated with a foliaceous cross and leafage below. In the lower half is a large pair of shears with broad blades, widening towards the ends



Fig. 6. Slabs at Kilmory Knap, Argyll.

which are cut square, and in the circle formed by the spring a quatrefoil. On the left of the shears is a long-handled axe, the blade turned inwards.

Grave-slab, measuring 5 feet 3 inches long, 1 foot 6 inches broad at the top and originally 1 foot 3 inches at the bottom, with a long oblique chamfer along the sides and ends (fig. 6, No. 3). The greater part of the stone is occupied by a large pair of shears, similar in character to the pair on the last-described slab. At the bottom is an anvil with a hammer

and turgus (blacksmith's tongs) above it. Within the spring of the shears is an interlaced cross. On each blade is an inscription in Lombardic letters, that on the right blade reading HIC · JACET . . . , and that on the left, HIC · JACET · CRI/STINUS · FABER.

Cross-slab, undressed, the sides and ends being irregular, measuring 5 feet 11 inches in length, and about 1 foot 9 inches in greatest breadth (fig. 6, No. 1). At the top is a plain wheel-headed cross, the spaces between the arms being occupied with a flat moulding parallel to the arms and ring.

Cross-slab, undressed, measuring 3 feet 3 inches in length and $10\frac{1}{2}$ inches in average width (fig. 7). On the front is a wheel-headed cross, 2 feet 1 inch in total length, the shaft being 14 inches in length. Between each of the arms and within the ring is a small boss, and the shaft, right up to the intersection of the arms, has a key pattern incised on it.

Slab with the effigy of a man clothed in a surcoat, and a round, closely fitting cap with a pronounced roll round the bottom, both hands in front of the waist, the left clasping the buckle of his belt, all in high relief (fig. 8). Above and on both sides of the head is an inscription in Lombardic letters, much worn.



Fig. 7. Cross-slab at Kilmory Knap, Argyll.



Fig. 8. Effigy at Kilmory Knap, Argyll.

(31) By IAN GORDON LINDSAY, F.S.A.Scot.

Two Culverin Balls of red and one of grey Sandstone, measuring $2\frac{3}{8}$ inches, $2\frac{5}{16}$ inches, and $2\frac{3}{8}$ inches in greatest diameter, found at Cessford Castle, Roxburghshire.

(32) By Mrs HARPER, The Knowe, Cauldbacks, Unst.

Snuff Quern. upper stone, measuring $9\frac{3}{4}$ inches in diameter. from Coloadale, Unst. Shetland.

(33) By Dr FELIX OSWALD, F.S.A.. Margidunum. East Bridgford. Notts.

Three fragments of Moulds of red clay for the manufacture of Samian (*Terra Sigillata*) ware, one bearing part of the potter's mark (P)ATERN(US) FE(CIT). from Lezoux, France; and fragment of a red Samian Bowl, showing a fig-leaf design. The moulds came from the Plique Collection. (See Déchelette. *Les Vases Ornées*, vol. i. p. 189. fig. 120. and p. 289.)

(34) By ARCHIBALD MACARTHUR, Clachanach.

Whetstone or Burnisher of brown quartzite, finely polished. of rectangular section. attenuating to the ends. which are ground flat, measuring 3 inches long, found at Clachanach, Iona. by the donor.

(35) By Mrs DE PREE, Beech Hill. Haddington.

Penannular Bronze Age Armlet of Gold, with expanding cup-shaped



Fig. 9. Penannular Gold Armlet from Berwickshire.

ends and a ring of oval section, measuring $2\frac{3}{4}$ inches by $2\frac{7}{8}$ inches in cross-diameters, the terminals $\frac{1}{2}$ inch in diameter (fig. 9). from Berwickshire.

(36) By KENNETH MACRAE, F.S.A.Scot.

Small flat Ring Brooch of Bronze, measuring 1 inch in diameter, the pin partly worn away, found at Applecross, Ross-shire.

(37) By JAMES S. RICHARDSON, F.S.A.Scot.

Copper-gilt Button of the Edinburgh and Northern Railway.

(38) By W. SCOTT GARDNER, North Berwick.

Wooden Hair Comb, with twenty-four small teeth on one edge and five large teeth on the other, slightly imperfect, measuring $1\frac{5}{8}$ inch by $2\frac{5}{8}$ inches, found in demolishing an old house on the north side of High Street, North Berwick.

The following Purchases for the Museum were intimated:—

Bow-backed Hair Comb of bone, imperfect, measuring $4\frac{1}{4}$ inches in length, with four bone rivets and remains of one of iron in position; three thin discoidal Shell Beads, measuring $\frac{1}{2}$ inch in diameter; four Bone Pins, measuring $3\frac{1}{4}$ inches, $2\frac{11}{16}$ inches, $2\frac{1}{4}$ inches, and $2\frac{1}{8}$ inches in length; Bronze Pin with round faceted head, measuring $3\frac{3}{16}$ inches in length; fragment of a small Plate from a Bone Hair Comb, which has had small teeth on one edge and larger ones on the other; Tine of Deer-horn, sharpened at the point, measuring $4\frac{1}{2}$ inches in length; piece of Pumice, measuring $2\frac{1}{4}$ inches by 2 inches by $1\frac{1}{16}$ inch; small-toothed Wooden Comb, the back straight and the ends chamfered, measuring $2\frac{7}{16}$ inches in breadth and $2\frac{1}{4}$ inches in height; Bone Borer, measuring $3\frac{1}{2}$ inches in length; Tube formed of the leg bone of a bird, cut square across both ends, measuring 3 inches in length; and Bone Object shaped like a small Snuff Spoon, measuring $1\frac{9}{16}$ inch in length. All from the Old Cattlefold, Vallay, North Uist.

Bone Toggle, measuring $2\frac{1}{2}$ inches in length, and Bone Pin, $2\frac{9}{16}$ inches in length, from Howmore, South Uist.

Bone Pin, measuring $2\frac{9}{16}$ inches in length, from Sithean Mor, Vallay.

Bone Pin, measuring $3\frac{1}{4}$ inches in length, and another with flat spatulate head, $2\frac{1}{8}$ inches in length, from Bachda Mor, Vallay.

Bone Needle-case, imperfect at the narrow end, measuring $2\frac{7}{8}$ inches in length, from Vallay, North Uist.

Disc of Bronze, with rose-shaped design in yellow enamel on the face; Ring Brooch of Bronze, the ring of triangular section, notched on the top, with punctulations inside and outside of the ring; Lancet-like Implement of Bronze with long thin tang, now bent at the end, measuring $2\frac{1}{2}$ inches in length; Bronze Needle, eye broken, measuring $1\frac{7}{8}$ inch in

length: two 4-petalled, calyx-shaped Bronze objects. All found on Glenluce Sands.

Two Stone Axes: (1) measuring $7\frac{3}{4}$ inches by $2\frac{13}{16}$ inches by $1\frac{5}{16}$ inch, found at Earlston Mains, Berwickshire; (2) measuring $3\frac{1}{2}$ inches by $1\frac{5}{8}$ inch by $\frac{7}{8}$ inch, found at Mosshouses, Earlston.

Wooden Bismar from Baltasound, Unst, Shetland.

Bead of translucent Blue Glass, measuring $\frac{1}{2}$ inch in diameter and $\frac{9}{32}$ inch in thickness: perforated Disc of purple Slate, measuring $1\frac{1}{2}$ inch in diameter and $\frac{3}{16}$ inch in thickness: quadrangular Bead of Jet, measuring $\frac{7}{8}$ inch by $\frac{3}{8}$ inch by $\frac{1}{8}$ inch: discoidal Bead of Shale, measuring $\frac{5}{8}$ inch in diameter and $\frac{1}{8}$ inch in thickness; small fragment of a large Armlet of Jet, partly fashioned, with the beginning of a perforation on one face; Bow of a small Bronze Buckle: six Black Farthings of James III.: fragments of at least nine Vessels of Pottery, some Neolithic: fragments of a Vessel of reddish Pottery, with vertical ribbing on the outside; fragments of red Beaker Pottery, string-marked. All found on Glenluce Sands.

Eight Beggars' Badges of Kirkwall, Largo, Leith, Ardrossan, Dundee, Dun. Ayr. and Leslie. Fife.

The following Donations to the Library were intimated and thanks voted to the Donors:—

(1) By THE FIRST COMMISSIONER, H.M. OFFICE OF WORKS.

Ancient Monuments of Great Britain. List of Monuments prepared by the Commissioners of Works. (To 31st December 1933.) London, 1934.

(2) By H.M. GOVERNMENT.

Facsimile of the Olive Branch Petition. 8th July 1775. From the Original in H.M. Public Record Office, London.

Calendar of Treasury Books. Introduction to vols. xi.-xvii. 1695-1702. London, 1934.

Close Rolls of the Reign of Henry III., A.D. 1259-1261. London, 1934.

(3) By THE SECRETARY.

Transactions of the League of Prehistorians, vol. i., part 3. Session 1932-33.

(4) By THOMAS MCGROUTHER, F.S.A.Scot.

The Romans in Britain. By Bertram C. A. Windle, M.A., Sc.D., etc. London, 1923.

(5) By ANONYMOUS DONOR.

The Letters of Sir Walter Scott, 1819–1821 and 1821–1823. London, 1934.

(6) By THE LIBRARIAN, Aberdeen University.

The Four Nations of Aberdeen University, and their European Background. By William M. Alexander. Aberdeen. 1934.

(7) By THE DIRECTOR, the British Museum.

Subject-Index of the Modern Books acquired by the British Museum, 1926–1930. London, 1933.

(8) By THE DIRECTOR, National Museum of Wales.

Wales and the Royal Stuarts, 1603–1807: a Handbook to a Temporary Loan Exhibition, 7th May–31st July 1934. Cardiff. 1934.

(9) By Sir GEORGE MACDONALD, K.C.B., LL.D., D.Litt., F.B.A., President.

The Roman Wall in Scotland. Second Edition. Oxford, 1934.
By the Donor.

Zur Historischen Bestimmung der Avarenfunde. By Andreas Alföldi. Budapest.

The Excavations at Dura-Europos. Preliminary Reports of the Fourth and Fifth Seasons, 1930–1932. Newhaven, U.S.A., 1933 and 1934.

La Trace de Rome dans le Désert de Syrie. Le limes de Trajan à la conquête Arabe. Recherches Aériennes (1925–1932). A. Poidebard. Paris, 1934. Texte et Atlas.

(10) By THE CURATOR.

Bulletin and Annual Report of the Russell-Cotes Art Gallery and Museum, Bournemouth. Vol. xiii., No. 2.

(11) By THE SECRETARY.

Journal of the Manx Museum. Vol. ii., Nos. 39, 40.

(12) By THE TRUSTEES.

The Manx Museum and Ancient Monuments. Twenty-ninth Annual Report. Adopted 26th April 1934.

(13) By Professor V. GORDON CHILDE, B.Litt., F.S.A.Scot.

Nature. No. 3356. Vol. xiii. February 1934.

24 PROCEEDINGS OF THE SOCIETY, DECEMBER 10, 1934.

- (14) By W. DOUGLAS SIMPSON. M.A., D.Litt., F.S.A.Scot., the Author.

Isle of Skye. Official Guide.

- (15) By The Most Hon. THE MARQUESS OF BUTE. K.T., F.S.A.Scot.

The Session Book of Wigtown, 1701-1745. Printed for private circulation. 1934.

- (16) By THE DIRECTOR.

Report for the Year 1933 on the Royal Scottish Museum. Edinburgh.

- (17) By A. D. LACAILLE, F.S.A.Scot.

The Story of Lamberton Toll, the Gretna of the East. By Alex. C. A. Steven. Berwick-on-Tweed.

A Survey of the Scottish Tardenoisian Industries. By the Donor. (Reprinted from the *Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences*.) London, 1932.

- (18) By THE KILT SOCIETY.

Comunn an Fheilidh. Inverness, 1932.

- (19) By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the Museum.

Le Temple des Muses. By Jean Capart, Conservateur en Chef des Musées Royaux d'Art et d'Histoire. Brussels, 1932.

Rock-Cut Souterrain at Brackcloon, Castletown Bere, Co. Cork. By Seán P. O'Riordáin. M.A.

- (20) By Professor Dr ERNST FABRICIUS, Hon. F.S.A.Scot.

Der Obergermanisch-Raetische Limes des Roemerreiches. Lieferung L. 1933.

- (21) By Captain A. C. SETON CHRISTOPHER. J.P., Naval and Military Club, 94 Piccadilly, London. W. 1.

The Family of Christopher and some others. (Printed for private circulation.) Exeter. 1933.

- (22) By L. M. ANGUS-BUTTERWORTH, F.S.A.Scot.

Ancient Monuments Society. Year Book and Proceedings, 1933-1934. Manchester. n.d.

- (23) By A. J. H. EDWARDS, F.S.A.Scot., Assistant Keeper of the Museum.

Die Grösste Germanische Handelsstadt an der Schlei. By Dr Herbert Jankuhn.

- (24) By Major J. ROBERTSON REID, M.D., T.D., F.S.A.Scot., the Author.

A Short History of the Clan Robertson. Stirling, 1933.

- (25) By Messrs MASSON ET CIE, the Publishers.

La Trépanation Crânienne chez les Néolithiques et chez les Primitifs Modernes. By Dr Emile Guiard. Paris, 1930.

Paléopathologie et Pathologie Comparative. By Dr Léon Pales. Paris, 1930.

- (26) By THE BOARD OF TRUSTEES.

National Gallery, etc., Scotland. Twenty-seventh Report to the Secretary for Scotland by the Board of Trustees, for the year from 1st April 1933 to 31st March 1934. London, 1934.

- (27) By THE SECRETARY, Central Bureau. Carte du Monde au Millionième. Ordnance Survey Office, Southampton.

International Map of the Roman Empire. Sheet N. 0-30. Aberdeen. Compiled and drawn in 1934. Published 1934.

- (28) By JAMES CURLE, LL.D., F.S.A.Scot.

The Ancient Coptic Churches of Egypt. By Alfred J. Butler, M.A., F.S.A. 2 Vols. Oxford, 1884.

- (29) By Lt.-Col. EDGAR ERSKINE HUME, M.C., F.S.A.Scot., the Compiler.

Society of the Cincinnati. Rules of the State Societies for Admission to Membership. Washington, 1934.

- (30) By THE HON. SECRETARY, the Clan Chattan Association, Ascot Gate, Ascot.

Clan Chattan. No. 1. November 1934.

- (31) By GILBERT ASKEW, F.S.A.Scot., the Author.

The Lowland Bagpipes: Notes on the Instruments in Wilton Lodge Museum, Hawick.

26 PROCEEDINGS OF THE SOCIETY, DECEMBER 10, 1934.

The following Purchases for the Library were intimated:—

The Skeleton of British Neolithic Man. By John Cameron, M.D., D.Sc. London, 1934.

Dictionnaire d'Archéologie Chrétienne et de Liturgie. Vol. xi., Part ii. Minister Altaris—Monza. Paris, 1934.

The Preservation of Antiquities. By H. J. Plenderleith, M.C., B.Sc., Ph.D., etc. London, 1934.

Acta Archæologica. Vol. v. Fasc. 1-2. Copenhagen, 1934.

Wade in Scotland. By J. B. Salmond. Edinburgh, 1934.

St Andrew of Scotland. By Professor R. K. Hannay. Edinburgh, 1934.

Norse Building Customs in the Scottish Isles. By Aage Roussell. Copenhagen, 1934.

Royal Commission on Historical Monuments, England. An Inventory of the Historical Monuments in Herefordshire. Vol. i., South-West. London, 1931. Vol. iii., North-West. London, 1934.

Essays presented to C. G. Seligman. Edited by E. E. Evans-Pritchard, Raymond Firth, Bronislaw Malinowski, and Isaac Schapera. London, 1934.

The Palace of Minos at Knossos. By Sir Arthur Evans. Vol. iii. London, 1930.

The Records of the Trades House of Glasgow, A.D. 1713-1777. Edited, with Historical Introduction "The Trades House 1605 to 1777," by Harry Lumsden, LL.B., LL.D. Glasgow, 1934.

The College of Justice: Essays on the Institution and Development of the Court of Session. By Robert Kerr Hannay, M.A., LL.D. Edinburgh and Glasgow, 1933.

Place-Names of Scotland. By James B. Johnston, B.D., F.R.Hist.S. London, 1934.

Memorials of Sir Gideon Murray of Elibank and his Times (1560-1621). By Lt.-Col. Hon. Arthur C. Murray, C.M.G., D.S.O. Edinburgh, 1932.

Christianity in Celtic Lands. By Dom Louis Gougoud. London, 1932.

The Excavations at Dura-Europos. Preliminary Report of First Season, 1928; of Second Season, 1928-1929; and of Third Season, 1929-1930. Newhaven, U.S.A., 1929, 1931, and 1932.

The following Communications were read:—

I.

MORE SHETLAND TOMBSTONES.

BY SIR GEORGE MACDONALD, K.C.B., LL.D., D.LITT.,
F.B.A., H.R.S.A., PRESIDENT.

Two years ago I described to the Society three Shetland tombstones, which seemed to merit rather fuller discussion than they can hope to receive in the Inventory of Ancient Monuments, now in active preparation by The Royal Commission. Five others, which I have met with since, have on various grounds an equally strong claim to particular notice, and it is with these that I now propose to deal.

I will take first two recumbent slabs, both dating from the last quarter of the sixteenth century and both associated with the roofless twelfth-century church that stands on the southern side of Lunda Wick, a bay in the southern portion of the west coast of Unst. One of them is actually inside the building, the other a little to the east of it. It will be convenient to begin with the latter, which is still quite legible. It measures 6 feet $7\frac{1}{2}$ inches by 3 feet 8 inches. Beneath the initials, and what must be the coat-of-arms, of the person commemorated are eight lines of lettering. The text was reproduced a number of years ago in a local newspaper, together with a translation by Dr Jakobsen, the well-known Danish philologist, who had recognised the language as Low German¹ but did not make any further comment. Fig. 1 shows that there is no room for difference of opinion about the words. The meaning is in equally fortunate case: "In the year 1585 on the 25th July, being St James's day, the worthy and well-born Hinrick Segelcken the elder, from Germany and a burghess of the town of Bremen, fell asleep here in God the Lord. May God be gracious to him."

The second inscription, now published for the first time, is a good deal more difficult to read, the surface of the stone—which is 5 feet $2\frac{1}{2}$ inches long by 2 feet 4 inches wide—being much weather-worn, as well as partly covered with a growth of lichen. From their first visit the staff

¹ The next inscription is also in Low German. Professor Schlapp, who has been good enough to allow me to consult him, finds nothing surprising in the presence of one or two characteristically High German forms. At the end, however, he would have expected the subjunctive *se(i)*, instead of the indicative *ist(i)*.

of the Commission returned with only the four opening words. Later, however, they were able to secure rubbings which brought the whole within measurable distance of decipherment. It was at once obvious that this slab, too, was a memorial to a burgess of Bremen. On the suggestion of Professor Schlapp, an inquiry was addressed to the Staatsarchiv there. It evoked a prompt and most informative reply from the Director, Professor Dr Entholt, whose records must be in

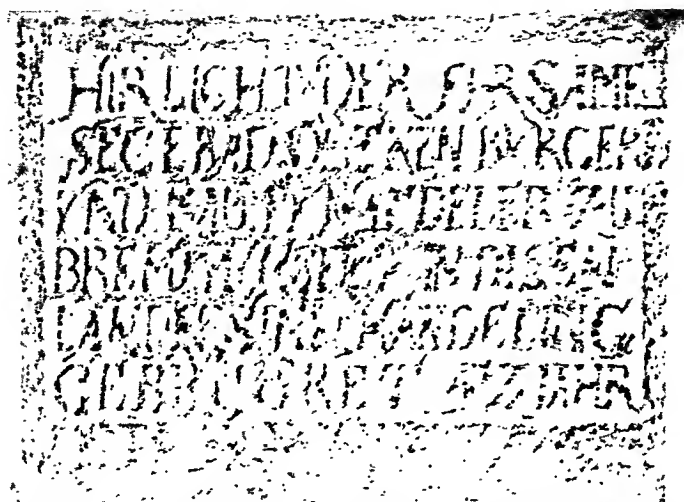
*ANNO 1585 DEN 25 IVLII
VP S IACOBI IS DE EHRBARE
VND VORNEHME HINRICK
SEGELCKENDE OLDER VTH
DVDESCHLANT VND BORGER
DER STADT BREMEN ALHIR
IN GODT DEM HERN ENTSCH
APN DEM GODT GNEDICH IS*

Fig. 1. Epitaph of Hinrick Segelcken at Lunda Wick.

wonderful order. Thanks to his assistance, it has been possible to establish the original text almost in its entirety. It is divided between two panels, an upper and a lower, which are separated from each other by a central cartouche.

A study of the rubbing of the upper panel (fig. 2) leaves only one point doubtful: the illegible word in the fourth line may possibly be **DE**. Otherwise everything is reasonably clear. On the lower panel (fig. 3) the first line is obscure, largely because of the lichen. The conjectural restoration in the transcript cannot, however, be very far from the truth. We may be sure that the year of death was mentioned, and comparison with the better preserved inscription (fig. 1) makes it virtually certain that the figures would be preceded by **ANNO**. The grounds for choosing 1573 will be apparent by and by. The rest is

plain sailing. The two panels, of course, run continuously, and the translation is: "Here lies the worthy Segebad Detken, burgess and merchant of Bremen. He carried on his business in this country for



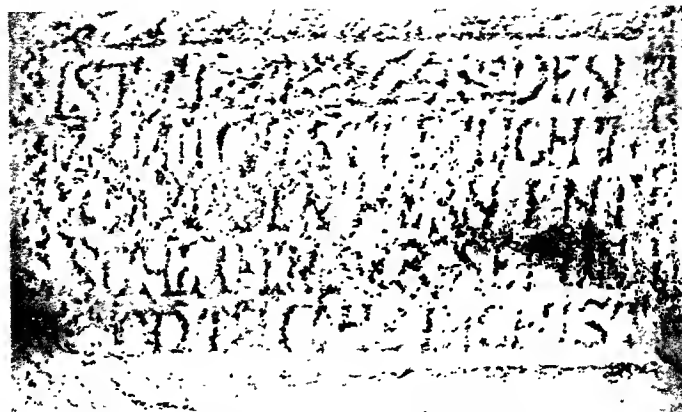
HIR LIGHT DER EHSAME
SEGEBAD DETKEN BVRGER
VND KAUFFHANDELER ZU
BREMEN [HE] HETT IN DISEN
LANDE SINE HANDELING
GEBRUCKET 5Z IAHR

Fig. 2. Epitaph of Segebad Detken at Lunda Wick: Upper half.

52 years, and fell blissfully asleep in our Lord in the year 1573 on the 20th of August. God rest his soul."

It is natural to ask how it came about that citizens of Bremen should have their last resting-place in that lonely spot on the most remote of the British Isles. For answer we have to transport ourselves back into a Shetland that was very different from the Shetland of our own time. Linguistically, economically, and commercially it was more closely associated with the Continent than with the kingdom to which

it owed political allegiance. Little more than a generation or two had passed since it ceased to be a Danish possession. We lack, it is true, a strictly contemporary picture. Nevertheless, we are by no means without the necessary material for reconstructing the island world in which these old worthies lived and moved and had their being. It



IST [ANNO 1573] DEN
ZO AUGUSTI SELIGHT
IN UNSEN HERN ENT
SCHLAPEN DER SEELE
GODT GNEDIGH IST

Fig. 3. Epitaph of Segebad Detken at Lunda Wick: Lower half.

was a world whose vernacular was a Scandinavian tongue and whose foreign trade was mainly with the Hanseatic towns.

The earliest detailed account we possess is that of a certain Captain John Smith, who was sent to Shetland—or, as he persistently spells it, Shotland—by the fourth Earl of Pembroke in 1633, in order to investigate the conditions under which the fishing industry was carried on. His mission covered a period of twelve months. What happened to his report we do not know; his patron's preoccupation with the ferment that culminated in the Civil War may have led to its being pigeonholed. But in 1661, nearly thirty years afterwards, he published

The Trade and Fishing of Great Britain displayed; with a Description of the Islands of Orkney and Shetland, a compilation based upon the journal he had kept. In 1670 this was reprinted as one chapter of a volume entitled *England's Improvement Reviv'd*, a second edition of which appeared in 1673. A lengthy extract from it is included in *Macfarlane's Geographical Collections*, as edited for the Scottish History Society.¹ Unfortunately the extract is not a "true" one. Macfarlane, or whoever was responsible for making it, has taken great liberties with the original, abridging and altering it at will. In quoting Smith, therefore, it will be well to ignore Macfarlane, and to refer to the edition of 1670, which is probably the most easily accessible.

The next conspicuous landmark is Sir Robert Sibbald's *Description of the Isles of Orkney and Zetland*, which was published in 1711² and which brings together, not without some repetition, a mass of information drawn from various sources. The author had access to Smith's book, which he quotes, and he also cites a long passage from a now lost Latin treatise by Robert Maule, a younger contemporary of George Buchanan.³ His chief debt, however, is to "the Descriptions of the particular Isles, such as they were sent to me by Bishop M'Kenzie's orders, by Mr Theodore Umphry, Mr Heugh Leigh and Mr James Key, the most intelligent Ministers there."⁴ These are often reproduced *verbatim* without more specific acknowledgment.⁵ Doubtless Sibbald would also learn something through conversation with acquaintances, such as "my worthie friend John Bruce of Simbister."⁶ At all events it seems hardly likely that an intelligent minister can have been his authority for the statement that "sometimes they catch with their Nets and Hooks Tritons, they call them Shoupillins, and Mermaids,

¹ Vol. iii. pp. 60 ff.

² It was reprinted at Edinburgh in 1845 by Thomas G. Stevenson, whom the heading of the Orkney section has misled into attributing the authorship of the whole to Robert Monteith of Egilshay.

³ *Op. cit.*, pp. 19 f. For Maule see *Macfarlane's Genealogical Collections* (S.H.S.), vol. ii. p. 151, where it is stated that the MS. had been lent to Sibbald, and that most of it was destroyed by a fire at his house in 1684.

⁴ *Op. cit.*, pp. 9 f.

⁵ This can be seen by comparison with the originals which are preserved among Sibbald's papers in the National Library of Scotland. A transcript of these, made by the late Mr Bruce of Sumburgh, was printed for private circulation by his widow in 1908, under the title of *Description of ye Countrey of Zetland*. Mr Bruce's "date about 1680" is near enough for all practical purposes. Leigh was minister of Bressay, and Kay (or Key) minister of Dunrossness. Mr Theodore Umphr(a)y figures simply as "M. T. V." Nor is there any clue to the identity of John Marr, who signs the first of the papers in the collection. This is the only one of the series mentioned by Sir Arthur Mitchell, who attributes it (*Proceedings*, vol. xxxv. (1900-1), p. 490) to Leigh on the strength of the sentence with which it concludes.

⁶ *Op. cit.*, p. 4. The "Gentleman that stayed some time there" (p. 6) was his own cousin, David Sibbald, as is clear from *Macfarlane's Geographical Collections* (S.H.S.), vol. iii. p. 65.

but these are rare and but seldome seen.”¹ There is nothing to suggest that he ever visited the islands himself. Nevertheless, Tritons and Mermaids apart, we may accept his sketch as a faithful enough reflexion of seventeenth-century Shetland, and from the seventeenth century we can work our way back to the sixteenth.

About 1680, then, the forces that were so soon to lead to the extinction of the Norn dialect were actively at work. So far, however, they had made surprisingly little progress. The language of the more out-of-the-way districts was wholly Scandinavian. Even in Dunrossness everyone was bilingual, although it was only in the upper part of the parish, about Sandwick, that people still used Norn for the purposes of every day intercourse. We may infer that the folk with whom our two Bremen burgesses did business more than a hundred years earlier, knew little or no English. There is another point of interest. After referring to the bilingualism of his parishioners, Kay adds that “by reason of their Commerce with the *Hollander*, they promptly speak *Low-Dutch*.”² The nature of this commerce he explains elsewhere, when he mentions the annual influx of Dutch fishermen “to whom the people from all Quarters, resort with Stockings, woven Gloves, Garters, Feathers &c., which they exchange with the *Hollanders* for Tobacco, Brandie, Shoes, Boots, Money, &c.”³ Presently he adds that it is rapidly declining, and that Shetland is being “impoverished, yet not so much by the decay of Fishes, as by the exorbitant exactions of the Customers that come to this Countrey: whereby they have banished the *Dutch* and *Hollanders* from this place, without whose commerce it can hardly subsist.”⁴

Kay is, of course, using “customers” in its now obsolete sense of custom-house officers. It is instructive to compare his attitude with that of Captain Smith. When the latter visited the scene in 1633, the Dutchmen were doing a roaring trade, and their numbers were almost incredibly large. He saw with his own eyes 1500 of their herring “busses”—vessels of 80 tons burden—at work not far from Unst, and they were accompanied by 400 “dogger-boats”—a smaller type of craft, whose quarry was cod and ling—as well as by 20 “wafters,” which carried thirty guns apiece and acted as convoys.⁵ Inquiry would probably show that this enormous development of the fishing industry coincided with the period of expansion that was inaugurated by the formation of the Dutch East India Company in 1602. Smith did not

¹ *Op. cit.*, p. 9.

² *Op. cit.*, pp. 22 f.

³ *Op. cit.*, p. 18.

⁴ *Op. cit.*, p. 21.

⁵ *England's Improvement* (ed. 1670), p. 257. In the extract from this, as reprinted in *Macfarlane's Geographical Collections* (S.H.S.), vol. iii. p. 64, “wafters” appears as “wasters.”

like it at all. After his return he was informed that "the composition of the *Hollanders* . . . was an Annual Rent of 100000 *l.* and 100000 *l.* in hand; and never having been paid or brought into the Exchequer, as *I* could hear of, there is in Arrearages above 2500000 *l.* an acceptable Sum, and which would come very happily for the present occasions of His Majesty." ¹ But that represents only a part of his policy. Here is the rest:—

"If God would please to put it into the heart of our Gracious King and his Subjects to set out such a Fleet of Busses, as before mentioned, for the Fishing-Trade, being in our own Seas, and that the *Hollanders* and all Strangers may be discharged from fishing in those Seas; and the *Hamburgers*, *Breamers*, and *Lubeckers*, and all Strangers, from trading to the Islands of *Orkney* and *Shotland*, and that only the Subjects of the three Kingdoms may have the Trading and Fishing, it would make our King one of the greatest Monarchs in the World, for Riches and Glory, and the three Kingdoms the happiest people in Christendom, and there would not be one wanting Bread, but the hearts of the Subjects would be lifted up with Praise to God and our King." ²

The appeal would seem to have fallen upon deaf ears, for in 1750, when another report was published,³ the position as regards the fisheries was very much the same. "About this Time [St John's Day], the *Dutch* to the Number of ten or eleven Hundred Bushes have wet their Nets upon the Coast, which they are obliged to do against the Eleventh of *June*, by an express Act of the States-General of the United Provinces." ⁴ Then follows a description of the rush of the inhabitants to the beach with their woollen and other goods. The profit which the Dutch make on their catches is reckoned "upon a moderate Computation" at "a Million Sterling annually." The anonymous author, who is supposed to have been a Dr John Campbell, disapproves of these proceedings as strongly as Smith had done. Indeed, his final appeal is even more impassioned:—

"I would therefore beseech you, that you would bestir yourselves like Men, and like *Britons* (for now or never is the Time) in the behalf of your Country, and wrest your Rights and Properties out of the Paws of the Ravishers: let neither Purses, flattering fawning Speeches, nor fair Promises, betray you into a Baseness which in the End, if not speedily, or timely prevented, must and will prove a great loss to *Britain*." ⁵

¹ *Op. cit.*, p. 257.

² *Op. cit.*, p. 258.

³ *Account of the White-Herring-Fishery in Scotland, carried on in the Island of Zetland by the Dutch, . . . and a Description of the Island, by a Gentleman who resided Five Years on the Island.*

⁴ *Op. cit.*, p. 25.

⁵ *Op. cit.*, p. 31.

But, if the Dutch remained, "the *Hamburgers*, *Breamers*, and *Lubeckers*" had vanished. Campbell nowhere alludes to them. Instead, he tells us that such trade as there was with Hamburg and the other Hanse towns was carried on by Shetlanders and in Shetland bottoms.¹ Smith had known that the Hanseatic League was doomed, for towards the end of his book he held it up to his countrymen as a dreadful example of what might happen to them, if they allowed their commerce to decay: "[Its towns] have undergone the same necessity that others, once famous Cities of Marts, have done, and have utterly lost all their Power and Strength at Sea."² Still, the individual Hanse merchants retained a hold on Shetland long after those words were written. They can hardly have disappeared until the eighteenth century had begun, since they were familiar enough to Sibbald's correspondents. In his *Description* we encounter them in various places, generally hailing from Hamburg, but occasionally from Bremen.³ We also get a glimpse of the competition from Britain that ultimately drove them from the field. Kay tells us that "the *Dundees Vessel*" lay in Grutness Voe and that "the *Dundee Merchants* have their Booths" on shore hard by.⁴ These words enable us to visualise the normal arrangement.⁵

Each individual trader or trading firm had a "factory" or booth, where there was ample room for the storage of goods and probably for the curing of fish. This was always near a beach, off which there was safe anchorage, and thither came every summer from the home port a vessel laden with such necessities and luxuries as the islands themselves did not produce—hooks and lines, herring-nets, spirits, strong beer, biscuits, cereals of various kinds, fruit, coarse cloth and linen, and the like. On its return voyage it carried back salted fish, fish-oil, butter, ponies, cows, sheep, skins of seal and otter, woollen stockings, and so on.⁶ As it was in Sibbald's day, so it must have been for generations previously. Hitherto the earliest known allusion to Hanse traders in Shetland has been a sentence in George Buchanan's *History of Scotland*, which speaks of a Bremen merchant who is said to live in Yell and to supply the inhabitants with such foreign commodities as they require.⁷

¹ *Op. cit.*, p. 15.

² *England's Improvement*, p. 261.

³ *E.g.* pp. 15, 18, 33, 34 f., and 38.

⁴ *Op. cit.*, p. 18.

⁵ Elsewhere (*op. cit.*, p. 15) Kay mentions "a Gentleman's House called *Bigloun* and a *Dutch Booth* built by *Bigloun* for the use of an *Hamburgh Merchant*, who lyes there in the Summer time and makes Merchant Fishes." So, too, he tells us (p. 18) that the Pool of Virkie (now much silted up) "is called the *Dutch pool*, because the *Dutch* and *Hamburgh Merchants* were used to lye there, and make Merchant Fishes."

⁶ *Op. cit.*, p. 9.

⁷ *Rerum Scotticarum Historia*, Bk. I, cap. 50, a reference which I owe to Dr Mackay Mackenzie. The anonymous author of *Certaine Matters concerning the Realme of Scotland . . . As they were Anno Domini 1597* (London, 1603) seems to be merely echoing Buchanan, and so probably is Maule, as cited by Sibbald (*Description*, p. 34).

That was in 1582. One of the tombstones at Lunda Wick takes us fully sixty years further back at a single bound. If this long digression has served its purpose, we should now be able to look at the inscriptions on these with more understanding eyes.

The records in the Staatsarchiv show that in the latter part of the sixteenth century there were two burgesses of Bremen who bore the name of Hinrick Segel(c)ken. One of these was admitted in 1565 and the other in 1581. It is obviously the former who was buried at Lunda Wick, for the slab calls him "the elder." That is all we are ever likely to know about him. Segebad(e) Detken is a much less shadowy figure. Here is the evidence from the Bremen archives:

1. His name was placed upon the roll of burgesses in 1514—the year after Flodden. According to a note attached to the genealogical table of the Bremen family of Deetjen (originally Detken), he lived to a very advanced age.
2. In 1562–3 Segebade Detken and Partners were defendants in an action raised by Johann Runge and Partners, merchants engaged in the Shetland trade, whose complaint was that obstacles were being put in the way of their visiting the harbour of Baltasound in Unst in the ordinary course of business. In their answers the defendants stated that they had been using the said harbour for about forty years.
3. In the copy of a letter from the Foud of Shetland, Olaf Sinclair ("Oloff Synckeler"), dated 18th August 1565, a shipmaster, Segebade Detken, and his ship are referred to in connection with the harbour of "Borwage" under date April, 1562.
4. In 1572 the name of a Segebade Detken appears in the Bremen burgess-roll as that of a *fidejussor* or surety. Although the Christian name of Segebade is not uncommon in the Detken family, Professor Entholt believes that the *fidejussor* of 1572 is the burgess of 1514.

The one difficulty that emerges is as to the word "Borwage," which seems clearly corrupt. It can hardly represent Baltasound. Burr-firth in the north of Unst is rather more possible. Or, again, there may perhaps be lurking under it some old name for Lunda Wick, where a homestead not far from the church is called Burragarth to this day. Leaving the question of the harbour open, we may glance for a moment at the dates. Segebade Detken's epitaph tells us that when he died he had been in business in Shetland for fifty-two years (fig. 2). The documents prove that in 1562 about forty of these had elapsed. In

view of the purpose for which it is cited, the figure of forty is hardly likely to be a serious understatement. We may therefore conclude that Detken survived the lodging of answers in the law-plea by twelve years, which again would give 1574 for the date upon his tombstone. That would be consistent with his appearance as a *fidejussor* in 1572. On the other hand, such traces as are visible on the rubbing would agree rather better with 1573, and the seeming contradiction would disappear if we were to suppose that he had brought his forty-first season to a close in 1562, before the action was raised. There is nothing in the German idiom ("an die 40 Jahre") to forbid such an easy solution.

In any event Detken must have begun business in Shetland about 1522. It is worth remarking that he had already been a burgess of Bremen for eight years. Unst can scarcely have been his first venture. Had he lost a market elsewhere? It is tempting to think that he had, if we remember that by 1522 the Hanse towns were beginning to feel the force of the blow inflicted on them by the Portuguese discovery of the sea-route to India. One result of this may well have been to stimulate the effort to exploit those markets on which the discovery could have no effect. However that may be, it was probably in the sixteenth century that Hanse trading with the Shetlands reached its zenith. The seventeenth witnessed its steady decline in the face of competition from Holland and the mainland of Great Britain. Before the middle of the eighteenth "the *Hamburgers*, *Breamers* and *Lubeckers*" had abandoned the voes and wicks for ever.

The discussion of the Lunda Wick inscriptions has incidentally led to a mention of the annual invasion of Shetland by Dutch fishing-boats—precursors of the Dutch trawlers which still make Lerwick harbour their headquarters season after season. The third tombstone on my list recalls another and a quite different link between the Netherlands and the northern archipelago. During the first half of the seventeenth century, Holland, free at last—*de facto*, if not *de jure*—from the shackles of the medieval Empire, successfully challenged the commercial supremacy of Spain and Portugal, and herself came to hold a large part of "the gorgeous East in fee." Her active agents were the servants of the Dutch East India Company, which has been aptly described as "a great military organisation, a mighty *imperium in imperio*, a powerful instrument of the Netherlands in their struggle with Spain."¹ Every year an argosy, laden with rich merchandise, made its way round the Cape of Good Hope to Europe. If it had tried to reach Dutch waters by passing

¹ *Cambridge Modern History*, vol. iv, p. 738.

through the Straits of Dover, it would have run a grave risk of being waylaid by the Spaniards off Dunkirk. Consequently, except perhaps during the years of truce (1609–19), it was wont to follow the more arduous but safer route round the North of Scotland. Even after the Spanish danger had been eliminated by the Peace of Westphalia in 1648, the same policy seems to have been adhered to; for, when the breach with the Commonwealth came in 1652, Cromwell's first step was to send Blake north towards the Shetlands with sixty sail, his instructions including an order "to take and seize upon the Dutch East India fleet homeward bound."

Lerwick appears to have been a regular port of call and, sometimes at least, the returning vessels were met there by an escort of men-of-war. This we may infer from an incident recounted by the Rev. Hugh Leigh in one of the communications which he sent to Sibbald. Speaking of Bressay Sound, he wrote:—"Here in *Anno* 1640, in the Summer time, ten *Spanish* Men of War (under Name of *Dunkirkers*) surprised four *Hollands* Men of Warr, waiting for the *East Indian* fleet, two whereof were sunk, at the West Shore of the Sound, one fled hence about eight or ten Miles North-westward, where running on Shore, her own Captain caused blow her up, and the fourth was taken and carried."¹

Bearing all this in mind, let us see what the tombstone has to say. It is a recumbent slab within the walls of the ruined church of St Mary, at Culbinsburgh, in the island of Bressay. The dimensions are 6 feet 5 inches by 2 feet 3½ inches. On the lower portion is a coat-of-arms, which will be described in the Inventory. On the upper portion is an inscription, consisting of eight lines of exceptionally well-cut lettering (fig. 4).² The language is Dutch, and very straightforward Dutch at that, there being nothing to give the veriest tyro pause except in the penultimate line. There the Y after **AVGVST** can only be the I of the Latin genitive, despite the intervening dot, which must be a mistake on the part of the stonecutter, comparable to the colon between **D** and **E** at the end of the first line. The word **ADY** is at first sight much more puzzling. There is, however, no doubt that (as one would expect from the context) it means "on the."³ The use of Latin to indicate the

¹ Sibbald's *Description*, p. 30.

² The drawing has been made by Mr C. S. T. Calder from a rubbing kindly sent me by Mr Thomas Mainland, Bressay, to whom I am further indebted for directing my attention to the correspondence quoted below.

³ Professor Geyl of the University of London, whom I have to thank for the explanation, adds that the word occurs often in the papers of the Dutch East India Company. Through Professor Barger, I learn from Mr R. Bylsma, Keeper of the National Archives at the Hague, that it is usually written *adie* and that, though common among seventeenth-century navigators, it is otherwise unknown. Both Professor Geyl and Mr Bylsma suggest that it is borrowed from one of the Romance languages.

month as well as the year had its parallel in the Low German inscriptions at Landa Wick. The translation runs:—"Here lies buried the brave Commander Claes Jansen Bruyn of Durgerdam, died in the service of the Dutch East India Company on the 27th of August in the year 1636."

In the spring of 1922 the stone formed the subject of several letters addressed to the *Shetland News*. An anonymous correspondent, "G." printed the text in full, and the suggestion was advanced that Bruyn might have been captain of one of the Dutch men-of-war destroyed off

HIER·LEYT·BEGRAVEN:D·E
MANHAFTEN·COMMANDEER
CLAESIANS·BRVYN·VAN
DVRGERDAM:GESTORVEN
IN DIENST:VANDENEEDER
LANTSE·OOSTINDISE COM
PANGIE·ADY·27·AVGVST·Y
A^o1636

Fig. 4. Epitaph of Commander Claes Jansen Bruyn at Culbinsburgh.

Bressay in the action described by Leigh.¹ Mr T. Mainland, who supplied a translation, pointed out that the suggestion must be rejected, since the action was not fought until Bruyn had been four years in his grave. A few weeks later the true story was told by Mr Stuart Bruce of Symbister, who had obtained it from Holland. Claes Jansen Bruyn was commander of the *Amboina*, a straggler from the East India fleet, which had failed to keep tryst with the main body at the Cape of Good Hope, and had had a solitary and most trying voyage to the Shetlands. Before she reached Bressay, a number of her crew had fallen victims to disease and her captain was dangerously ill. He died three days after his vessel had cast anchor in the Sound. There may have been those in Lerwick who saw the hand of Nemesis in her misfortunes. The

¹ See *supra*, p. 37.

name she bore was that of the island where, thirteen years previously, twelve English colonists had been most cruelly done to death by the Dutch governor on an unfounded suspicion of conspiracy. The "massacre at Amboina," as it was popularly called, created an immense sensation at the time, and so deeply did the memory of it rankle that more than thirty years later, when England made peace with Holland after the first Dutch War, Cromwell insisted on the payment of an indemnity of £300,000 to the descendants of the victims.

That, however, is by the way. The main thing is Mr Bruce's story. No apology is needed for reproducing his letter of 22nd March from the file of the *Shetland News*:—

"When 'G' kindly gave us the inscription on the tombstone, many people wished to know who CLAES JANSEN BRUYN was, and how he came to be buried at Cullingsbrough: so I wrote at once to my friend Heer de Balbian Verster, an eminent nautical antiquary in Amsterdam, and I have now received some details from him, which will, I think, satisfy our curiosity.

"The first trace of Bruyn is in the log of the Dutch warship *Het Casteel Batavia*, where he is mentioned as commanding a squadron off Mozambique to endeavour to effect the capture of a fleet of Portuguese 'caraquas' (carracks). The log is for the year 1635, and two of the Dutch ships (one being that of Bruyn) were to join up at Table Bay with the 'Return-Fleet' from the East Indies, in 1636. Heer de Balbian Verster says that the 'Return-Fleet' left Batavia on 5th January 1636, under the command of Governor-General Hendrick Brouwer, who had resigned his post and was going home to Holland. At the Cape of Good Hope the fleet was joined by the ship *Frederik Hendrik*, she having come straight from Surat to the Cape, but Bruyn's ship, which should have come with the *Frederik Hendrik*, did not make her appearance, and, after waiting at the Cape for more than three weeks, the fleet sailed without Bruyn and his ship the *Amboina*, all the vessels arriving safely in Holland on 31st July 1636.

"With regard to the *Amboina* we learn that she left Surat on 9th February 1636, and after a very protracted passage reached the Cape of Good Hope on 6th May, a long time even in these days. She found that the 'Return-Ships' had gone home, and she sailed from Table Bay on 9th May, her crew being then 'healthy and peaceable folk'!

"Now commenced the misfortunes of the *Amboina*. Head winds and gales buffeted her, and sickness seized upon her crew. It was not until 24th August that she made Bressay Sound, 29 of her crew having died on the passage from the Cape, and so many were ill that but 20 healthy men remained, who, not being able to govern the said ship, have, with great good fortune, reached the said harbour."

"The Commander, Claes Jansen Bruyn, worn out by illness and the trials of that 'long, difficult, and perilous voyage,' died aboard the *Amboina* on 27th August 1636, three days after the ship reached the

shelter of Bressay Sound, and was, as we know, buried in Bressay. This raises the question: Why was he not buried in Lerwick? Perhaps there was no graveyard at that time, or, if Bruyn was a Roman Catholic, the Kirkyard of Cullingsbrough may have been the nearest consecrated ground.

"The *Amboina* lay in Bressay Sound for many weeks to restore the health of the enfeebled crew, and she at length reached Texel, with her valuable cargo of Persian silk, on the 16th October.

"The tombstone calls Bruyn 'of Durgerdam.' This was then a small village on the Zuider-Zee, not far from Amsterdam."

Although the two remaining tombstones have less romantic associations, they nevertheless present some points of special interest. Unlike the three already described, they are not recumbent slabs but mural tablets, being built into the outer face of the wall of the ruined chapel of Reafirth at Mid Yell. Appearances suggest a doubt as to whether this has always been their position. But, until we know more about the history of the chapel, that must remain uncertain.

The first of them is a handsome stone (fig. 5), measuring 4 feet 5 inches by 2 feet 10 inches. The herakdic bearings and initials at the top still stand out clearly, and may be left to speak for themselves. The difficulty of reading the weather-worn Latin inscription is aggravated by the number of ligatures and also by the fact that, in order to avoid overcrowding, some of the letters have been made only half the height of those that precede and follow them. With patience, however, practically everything becomes plain. The only letter that has a peculiar form is Q, which always resembles a retrograde P. The text, then, is as follows:—

HEIC · IN · SEPULTURA · PATRUM · SUB
SPE · BEATÆ · RESURRECTIONIS · REQUIES
CVNT · OSSA · CINERESQVE · INSIGNIS · ILLIVS · VIRI
GILBERTI · NEVELLI · D · DE · WINDHOUS
ET · SKOUSBURGH · NECNON · IPSIUS · CON
JUGIS · PIENTISSIMÆ · KATHARINÆ · UPHRE
DÆ · M · GUILIEMI · UPHREDI · QUONDAM · DE
BRESSAY · PASTORIS · FILIÆ · LEGITTIMÆ
OBIIT · ENIM · ILLE · 310 · DIE · APRILIS · ANNO
1694 · ÆTATIS · AVTEM · 71 · ILLA · VERO · 310
DIE · MARTII · 1691 · ET · ÆTATIS · SUÆ · 67
IN · QUORUM · GRATIAM · HOC · MONU
MENTVM · CONDIDIT · EORVM · NATV · MAXI
[FIL] GUILIELMVS · NEVELLVS · A · M

Corrigenda.

Page 40. A fresh comparison with the original shows (a) that in line 2 of the inscription the second ligature is **UR** and that **NI** is ligatured, (b) that in line 3 **QVE** is contracted, and (c) that in line 10 **TE** is ligatured.

Page 44. A similar comparison shows that in line 9 of the inscription the last word is **VERO**. The word "everlasting" should therefore be omitted from the translation.

Page 47, line 3. *For* "Mrs Neven's" *read* "Barbara's". At that time wives did not assume their husbands' surnames.

[*To face p. 40.*]

Corrigendum.

Page 427. Table at foot of page. *For* Iron *read* Silicon, and *for* Silenium *read* Iron.

The lady's age is a little doubtful: the second digit may be a 9, not a 7. The figures at the end obviously indicate the year in which the

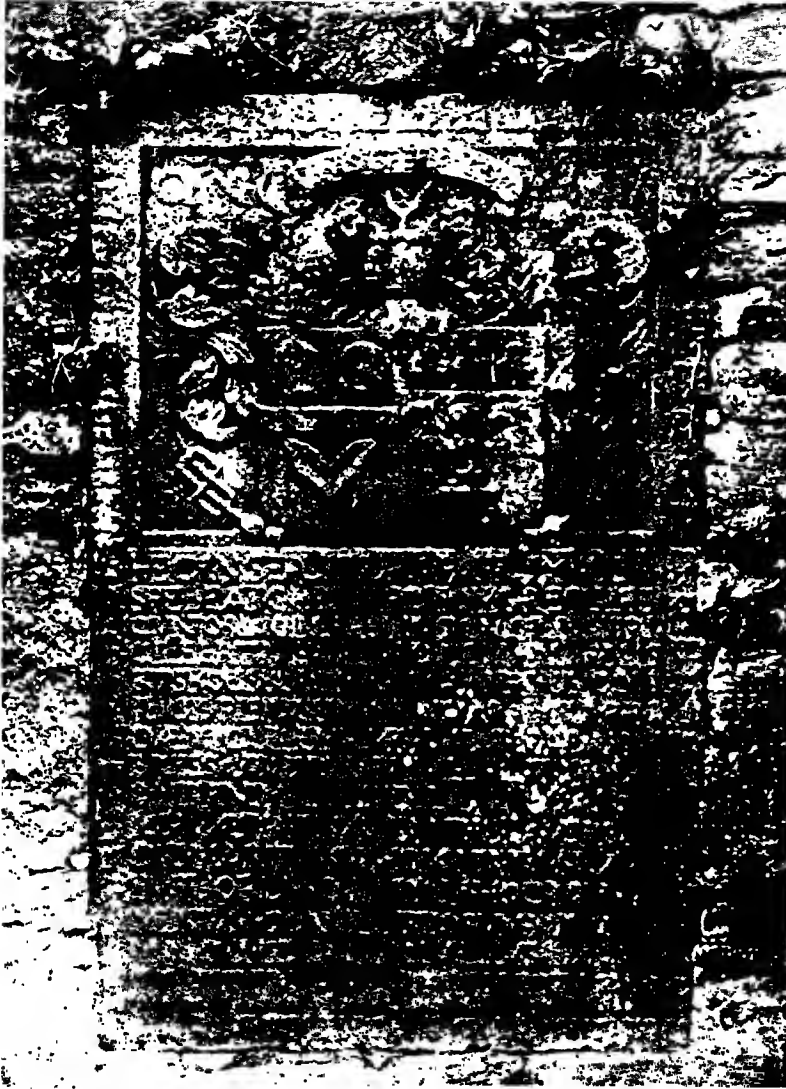


Fig. 5. Tombstone of Gilbert and Katharine Neven at Reafirth.

stone was erected. Whether there were any letters in front of them, is uncertain. The translation of the rest runs: "Here in the tomb of his fathers, in the hope of a blessed resurrection, lie the bones and ashes

of that eminent man, Gilbert Neven, laird of Windhouse and Scousburgh, also those of his most devoted wife, Katharine Umphrey, lawful daughter of Mr William Umphrey, once minister of Bressay. He died on the 3rd day of April in the year 1694, the seventy-first of his age. she on the 3rd of March 1691, the sixty-seventh of her age. This monument was erected in their honour by their eldest son, William Neven, M.A."

It will be observed that not only the Christian names but the surnames of the four persons mentioned are Latinised, that of the lady being given a feminine termination. Although two of the Sinclair tombstones now at Jarlshof supply a parallel, the officials of the Historical Department at the Register House, who have allowed me to draw freely upon their experience, confirm my own impression that such a practice is unusual in Scotland.¹ In this case there is the further anomaly that Neven becomes Nevellus. In the records the name is spelt in all sorts of ways, but no variation introducing the letter "l" has been noted.² Misled by the false analogy of Colvin and Colville, Melvin and Melville, which are certainly interchangeable, the author of the inscription has apparently sought to establish a connection with Neville, the Latinised form of which is, however, Nevilla. And there are some grounds for thinking that the man who erected the monument also composed the epitaph. In it he is described as a Master of Arts, which indicates that he was proud of his learning and did not wish posterity to forget it.

The description provided a clue to his history which it seemed worth while following up. After Dr Douglas Simpson and Mr F. C. Nicholson had made fruitless search at Aberdeen and Edinburgh respectively, Mr G. H. Bushnell, University Librarian at St Andrews, was able to tell me that a Gulielmus Neven had taken his Master's degree at St Salvator's College on 25th July 1676. That this was the future laird of Windhouse is virtually certain. It may seem surprising that with such a career before him he should have been sent to college. But his maternal grandfather had been minister of Bressay, and it may be that his mother dreamed that her son would follow in his footsteps. If so, the dream was soon dispelled. On 25th April 1678, the lad had a disposition of 40 merks land in Windhouse from his father, which means

¹ At the same time it is by no means unknown outside of Shetland. See, for example, Hay Fleming's *St Andrews Cathedral Museum*, p. 75 (No. 6), p. 79 (No. 9), and p. 87 (No. 15). It is worth pointing out that all of these were probably in the churchyard before William Neven matriculated at St Andrews, of which (as we shall learn presently) he was a graduate.

² The founder of the Windhouse family, who was what Sibbald would have described as an "Incommer," appears as "Nimane Neving" in a document of c. 1622: see *Proceedings*, vol. xxv, (1890-91), pp. 54 ff.

that he then settled down as heir-apparent. Eleven years later, four or five years before he actually succeeded, he married.¹

This brings us to the companion tombstone (fig. 6). It is rather smaller than the other and of a different shape, being 4 feet broad by 2 feet 9 inches high. The upper corners, too, are bevelled and enough



Fig. 6. Tombstone of Barbara Neven at Reafirth.

of the moulding remains to show that this was not an accidental feature. Unfortunately, the tablet has been broken from top to bottom, either before it was placed where it now is or in the process of building it in. Moreover, one side of it is partly concealed by a modern headstone, which has been set up so close to the wall as to make the taking of a comprehensive photograph impossible. The design is worth dwelling upon, not indeed for its artistic beauty but for its exceptionally elaborate character. It is a rather ambitious representation of the spirit of the departed being received at the gate of Heaven.

¹ On 22nd October 1689. For these dates and facts see *Zelland Family Histories*, 2nd ed., p. 209.

Above, on either side of a central crown is a cherub, emerging from a background of clouds. From the mouth of each cherub there issues a scroll bearing an incised inscription. The scroll on the left stops short on reaching the object indicated by the legend which it bears: **ECCE CORONA** ("Behold, a crown"). The other, which winds beneath it, proclaims **BEATI QUI IN DOMINO MORIUNTUR** ("Blessed are the dead which die in the Lord"), the letters being so cut that they have to be read from right to left, an indication of the quarter from which the voice is supposed to be coming. A third scroll, which passes upwards beneath the second in the direction of the crown, displays the words **VENI DOMINE VENI AMEN** ("Come, Lord, come. Amen"), also in retrograde lettering. This last scroll proceeds from the lips of a female figure, recumbent on a bier, with hands raised in the attitude of prayer. Between the scroll and the recumbent figure is a shield charged: A sword and key saltire-wise between three cross-crosslets. Above the shield, again, are the initials **B K** for Barbara Kennedy and, at a different angle, **W N** for William Neven. The whole of the rest of the available space is filled with lettering, the individual letters being frequently ligatured and occasionally half-size.

The main part of the epitaph begins as a description of the scene that the sculptor has depicted:

SIC
MIGRAT
BARBARA . KEN
NEDA . INCLYTI . V . JOAN
NIS . KENEDI . B . DE . KERMYKS
PRÆFECTIQ . ABERDONENSIS . FLIA
LEGITTIMA . CUJUS . HEIC . SUB . CIPPO
RECONDVNTVR . OSSA . OBIIT . ENIM
3TIO . DIE . DECRI8 . AN : 1694 . IN . EJUS . AET̃E
MEMORIAM . HUNC . LAPIDEM . POSUIT
ILLIUS . CONJUX . MŒRENS . MAGR
GUILLIELMUS
NEVELLUS . D . DE
WINDHOUSE

"The passing of Barbara Kennedy, who was the lawful daughter of a man of mark, John Kennedy, Baron of Kerinucks and Constable of Aberdeen, and whose mortal remains lie buried here. She died on the 3d day of December 1694. This stone was set up to her everlasting memory by her sorrowing husband, Mr William Neven, laird of Windhouse."

The surnames are again Latinised, and Neven once more appears as Nevellus. This epitaph and the one on the tomb of Gilbert Neven and his wife are clearly from the same hand, and there can be little doubt as to that being the hand of the dutiful son, who was also the sorrowing husband. Note that William describes himself as laird of Windhouse, whereas Gilbert has the title of laird of Windhouse and Scousburgh. Thereby hangs a tale. The father seems to have got into pecuniary difficulties some years before his death, for in 1687 he wad-setted Scousburgh, which is in the parish of Dunrossness, to his fellow-laird, Stewart of Bigton.¹ The transaction was the subject of intermittent litigation for nearly a hundred years, and a judgment of the Court of Session, pronounced in 1783, suggests that William might safely have continued to call himself "of Scousburgh," even although he had lost control of the lands. Indeed, the title was actually used by his nephew Gilbert, who died in 1743, and was subsequently claimed by Gilbert's daughter.²

Another phrase appearing on the stone demands a longer explanation. The lady's father is designated *Præfectus Aberdonensis*. This has usually, and not unnaturally, been interpreted as meaning that he had been Provost of Aberdeen.³ At the outset of my inquiry, however, Dr Douglas Simpson, to whom I had applied for information about him, pointed out that the dignity was not a municipal one, but a hereditary office belonging to the proprietors of Ellon Castle. I am indebted to Mr Innes of Learney, Carrick Pursuivant, for an illuminating note upon the subject:—

"Kennedy of Kermucks was Constable of Aberdeen, an office feudally annexed to the lands of Kermucks, subsequently conjoined with Ellon Castle, to which the office of Constable of Aberdeen now belongs as a part and pertinent. These Constabularies involved keeping order on public occasions, and at the annual Fair and in 1562, on the visit of Mary Queen of Scots, Kennedy of Kermucks was summoned to perform the duties of his office (T. Mair, *Parish of Ellon*, p. 37). All heritable Constabularies were abolished by the Heritable Jurisdictions Act, 1747, but the Dunstaffnage case (*Argyll v. Campbell*, 1912, S.C. p. 458) showed that the underlying duties and office of keeping a Royal Castle were not struck at by the Heritable Jurisdictions Act, so that the proprietor of Ellon Castle is still Heritable Keeper of the Castle of Aberdeen which is an earth motte underneath Castlehill Barracks. The office still exists, being feudally annexed to Ellon Castle, and no occasion has ever arisen for it to fall into desuetude, because, owing to Castlehill Barracks having been built on the top, His Majesty has

¹ *Zetland Family Histories*, 2nd ed., p. 209.

² See *Proceedings*, vol. xxv. (1890-91), p. 61.

³ E.g. *Zetland Family Histories*, 2nd ed., p. 209. *Aliquando bonus dormitat Homerus!*

been in actual possession, and there has accordingly been no occasion for the Keeper to perform any duties. The office of Constable and Keeper of Aberdeen Castle carries with it an official coat of arms: Argent, a sword and key in saltire Gules, on an inescutcheon of the arms of whoever happens to be proprietor of Ellon for the time being."

The last sentence can be illustrated from the tombstone, where the three cross-crosslets on the shield are for Kennedy, the sword and key in saltire for the hereditary office. At the first glance the expression "Baron of Kermucks" may seem odd to those unfamiliar with the mysteries of feudal terminology. It will cease to do so, if they remember the Baron of Bradwardine, a parallel most aptly cited to me by Mr Innes. On the other hand, in this case it ought in strictness to have been preceded by *olim*. The connection of the Kennedy family with Kermucks was finally and formally severed in 1669, when Barbara was an infant in arms. On 4th August of that year Sir John Forbes of Watertown obtained under the Great Seal a charter of several lands, including Ellon Castle and Kermucks, "together with the heritable office of constabulary of Aberdeen," and the charter was confirmed by Act of Parliament in the following December. The documents state that, as a preliminary, two "John Kennedies"—a father and his son-and-heir—had resigned their rights.¹

The senior of these was John Kennedy of Kermucks, the Covenanted laird who flits in and out of the pages of Spalding's *Trubles of Aberdeen*. At that time he was a douce Presbyterian elder. But in 1652 he killed his neighbour, Thomas Forbes of Watertown, in a brawl arising out of some trumpery dispute about the digging of a ditch.² Arrested in Edinburgh, he escaped from prison. As neither he nor his son (who had taken an active part in the *melée*) appeared at the diet fixed for their trial, both were outlawed. He sought refuge on the lonely island of Stroma in the Pentland Firth, a wadset of which was ultimately granted to him by the Earl of Caithness.³ Meanwhile he had removed his family from Aberdeenshire. His estates in the county had not been confiscated, and he had sold them to John Moir, who in 1659 disposed of them to John Forbes, son of the murdered laird and recipient of the charter of 1669. That charter records the resignation of Moir and his heir as well as of the two Kennedys. Until it was

¹ *Acts of Scots Parliament*, vol. vii, p. 593. Cf. [Joseph Robertson] *Book of Bon Accord* (1839), pp. 374 f., where the relevant extract is printed.

² See "The Slaughter of Watertown" in T. Mair's *Narratives and Extracts from the Records of the Presbytery of Ellon* (1894).

³ His tomb is still a conspicuous object there. See *Royal Comm. Inventory of Monuments, etc., in Caithness*, No. 59.

confirmed, there may have been some room for doubt as to who was Hereditary Constable of Aberdeen. Thereafter there could be none.¹

But who was Mrs Neven's father? The tombstone shows that she was born in 1669. As the Covenanter was married in 1625, it is *prima facie* more likely that she was his granddaughter than that she was his daughter. If so, her father must have been John Kennedy the younger, and her mother his second wife, a Miss Mowat, whom he married in 1663.² There is, however, a serious difficulty. In the light of the facts narrated above, it seems most unlikely that anyone would have called the younger Kennedy "Baron of Kermucks and Constable of Aberdeen" or have used the coat-of-arms of the Constabulary in connection with his name.³ The alternative is to suppose that his father, then an old man, married for a second time in 1667 or 1668, and that a daughter Barbara was born in 1669. Unfortunately there is no means of testing the soundness of this hypothesis, as after 1666 there is a long gap in the registers of Canisbay, within which parish Stroma lies. But, if it could be verified, everything would be in order. Barbara probably came into the world before the charter was granted, certainly before it was confirmed. And at the worst one could always fall back on the time-honoured maxim of "Aince a baillie, aye a baillie."

Having set forth the dilemma, I must content myself with bringing the *data* furnished by the tombstone to the notice of the family historians. It will be for them to make their choice. But there are still two portions of the inscription to be mentioned. The first can be dismissed without comment. It is enclosed within a plain framework, immediately below the word **WINDHOUSE**, and reads:—

CRESCIT . POST .
FVNERA . VIRTUS

which might be freely rendered "Death is swallowed up in victory." The other, similarly enclosed, is to the right of it, partly under **MCERENS**

¹ There is an interesting sketch of "The Kennedys of Kermuck and Stroma" by John Mowat in *Scottish Notes and Queries*, 3rd series, vol. v, p. 109 ff. A more recent and detailed account has been published in the *Proceedings of the Orkney Antiquarian Society* (vol. x, pp. 17 ff., and vol. xi, pp. 19 ff.) by Mr John Mooney, Kirkwall, whom I have to thank for valuable help, most willingly given.

² I owe my knowledge of this marriage to Mr John Laughton, Corstorphine, a descendant of the Kennedy family, who refers me to Beaton's *Registers of Canisbay*, 1652-66 (Scottish Record Society), p. 17. It seems to have escaped even the vigilant eye of Mr Mooney, who mentions only a marriage to Margaret Burnett (c. 1656) and one to Jean McKenzie (1678).

³ At the same time Mr Laughton tells me that he has in his possession a document, witnessed at Kirkwall in 1678, in which the younger Kennedy is described as "Constable and Burgess of Aberdeen."

MAGR and partly under the bier on which the dying lady rests. It runs:—

VIGINTI · VIRGO · PER · ANOS · POSTEA · QUINOS
MARITO · NUPTA · FILIUMQ · PEPERAT · UNUM
FILIAS · VERO · DUAS · SUPERSTITE · ELIZABETHA
FILIA · DISCESIT · ÆTATIS · VIGESIMO · SEXTO

"A maiden for twenty years, she was afterwards married to her husband for five, and bore one son and two daughters. She died in the twenty-sixth year of her age, survived by her daughter Elizabeth."

If this quatrain was written by William Neven, as we may believe it to have been, the versification hardly redounds to his credit. The stonecutter was probably responsible for **PEPERAT** and **DISCESIT**, blunders due to the omission of letters.¹ But it is obvious that the lines are intended for hexameters, and they fairly bristle with false quantities. It would be unfair to draw any inference as to the standard exacted for a degree at St Andrews in the seventeenth century. Nearly twenty years had elapsed since the laureation of Gulielmus Neven, and we do not need to look far for what the cynic might regard as still more convincing evidence of amnesia. Barbara Kennedy of "everlasting memory" died at the beginning of December 1694. By the following October the widower had found himself another bride.²

¹ That is, on the assumption that the original draft had **PEPERERAT**. But it is possible that it may have had **PEPERIT**.

² *Zelland Family Histories*, 2nd ed., p. 209.

II.

EXCAVATION OF THE VITRIFIED FORT OF FINAVON, ANGUS.

BY PROFESSOR V. GORDON CHILDE, B.LITT., F.S.A.Scot.

The vitrified fort occupies the crest of the northernmost of the ridges of conglomerate that constitute Finavon Hill (fig. 1). This ridge runs



Fig. 1. Air-photograph of Finavon Hill.
(Royal Air Force Official—Crown Copyright Reserved.)

east and west, the highest point lying at the east end. On the north the ground slopes up continuously from the plain of the South Esk. On the south the descent from the ridge is precipitous, but the crest is separated

from the precipices by a level platform, some 80 feet wide, about 10 feet lower than the crest. The southern rampart of the fort does not stand on the edge of the precipice, but on the slope down from the ridge-crest. The platform accordingly lies outside the main enceinte, but is partially defended on the east by an outwork (fig. 2). The present western rampart of the fort stands on what was once a distinct hill separated from the main ridge by a ravine in which the crater-like depression

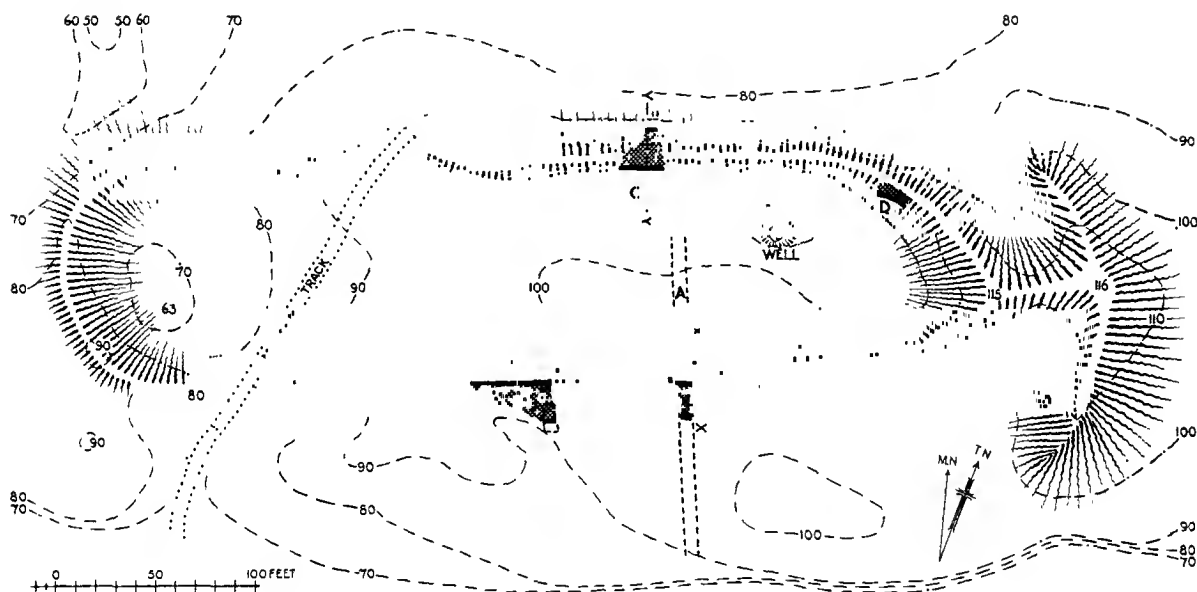


Fig. 2. Plan of Fort on Finavon Hill by Mr H. Fairhurst and Major Deedes.

round an old well is still visible. Descriptions of the fort at the beginning of last century¹ indicate that the well was then separated from the main enceinte, by a high wall, and the whole western section may have been a secondary addition. The partition wall has been destroyed by a road built across the hill, probably when the trees on it were felled. The same road has mutilated the rampart at the western end of the enceinte while the ramparts were also used as quarries for filling in the well seventy years ago and on other occasions. The monument was therefore no longer intact when we commenced operations.

In 1933 a section (A on fig. 2) was cut from the edge of the precipice on the south across the platform, through the south rampart to the inner

¹ Warden. *Angus or Forfarshire*, vol. v, p. 17.

base of the north rampart. The results then obtained to serve as a guide to future operations were as follows:—

(1) No signs of occupation nor of a fosse were observed on the platform outside the rampart.

(2) The rampart on the south is now represented by a bank over 30 feet wide and rising 12 and 6 feet above the turf at its outer and inner margins respectively. This bank is composed entirely of loose sandstone

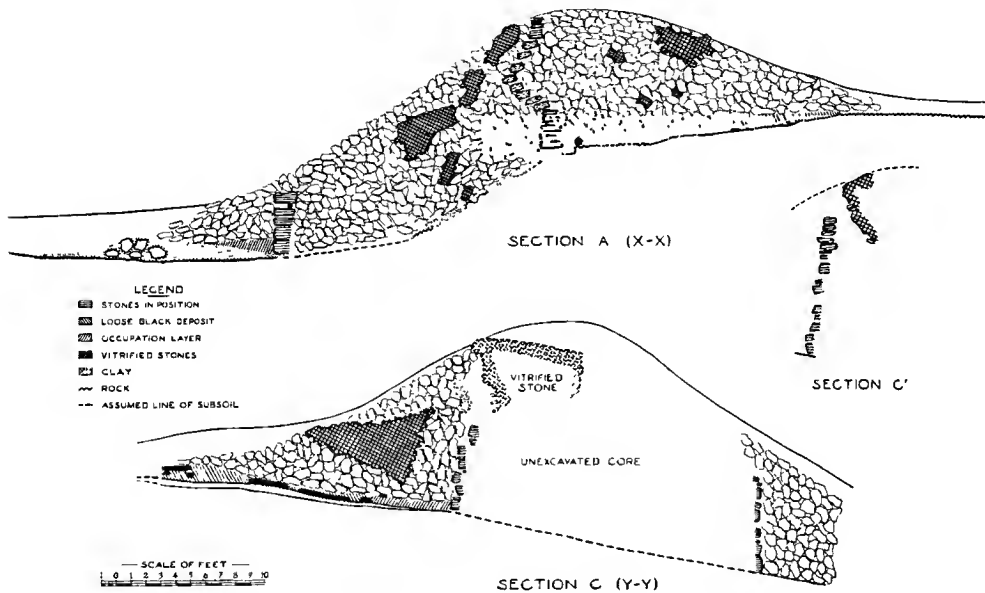


Fig. 3. Sections across the ramparts.

slabs, mixed with the products of their disintegration. Large blocks of vitrified stones are exposed at various levels on the outer slope and a few others project through the turf inside.

(3) The mass of debris results from the collapse of a built rampart, the faces of which were preserved for a few courses only. In section A they stand at the top and bottom respectively of a gentle slope where the bed-rock, dipping north, crops out in step-like ridges (fig. 3).

(4) The outer face at the base of the slope consists of four courses of large, quarried sandstone blocks, standing $4\frac{1}{2}$ feet high and nearly vertical. The foundation course comprises stones 42 inches long and 12 to 14 inches high. This wall is faced on one side only.

(5) The inner wall is also only one course thick and is built of rather smaller stones. At the point of section it had been standing 9 feet high

with a batter of 1 in 6. But only the lowest five courses (3 feet high) and the top four courses ($1\frac{1}{2}$ feet) retained anything like their original positions. The intervening courses had buckled outward so that they had to be demolished after they had been measured and photographed.

(6) Apart from one stone in the fourth course of the inner face which showed a blister, none of the stones of either face were vitrified. In the collapsed rubble inside the inner face the principal masses of vitrified stone were found 4 to 6 feet above virgin soil and 6 to 10 feet from the wall-face; smaller fused stones were discovered nearer the face and lower down. Between the two faces masses of stones fused together were found at all levels right down to virgin soil. All were discrete lumps that had evidently slipped out of position. No timbers were observed.

(7) Animal bones and remains of charred wood lay against the inner face. Extending about 19 feet inwards from the wall's foundations right to the crest of the main ridge the reddish sub-soil was covered with a purple sticky crust resembling clay. Upon this lay a stratum of black soil 6 to 8 inches thick. In the black layer, besides animal bones, the charred remains of logs (of willow or poplar), some with branches attached, could be observed. A whorl and a ? loom-weight of stone were found upon the purple crust. There was, in a word, an occupation layer under the debris of the rampart.

(8) In the interior of the fort, north of the crest of the ridge, no occupation layer nor any relics were encountered for a distance of about 65 feet. Thereafter to the base of the rampart the surface of the sub-soil bore a purple crust upon which lay a deposit 6 to 11 inches deep comprising large fragments of burnt logs and a few burnt animal bones.

OPERATIONS IN 1934—SECTION B.

In June 1934 a section ultimately 50 feet wide was dug up to the face of the south rampart where section A had shown relics were to be expected. The section began at the base of the apparent slope of the rampart which approximately coincided with the crest of the main ridge of the hill and proved to be 19 to 21 feet from the foundation of the rampart's inner face. Excavation actually began about 100 feet west of section A. After the loose surface soil and the debris of the rampart had been cleared away, the underlying deposits were explored with trowels and brushes down to virgin soil in strips 15 feet wide. In each strip we advanced from the base line to the wall-face measuring and plotting logs and other features as they were exposed. Each strip, when thus cleared and noted, was used as a dump for the refuse from the next. By this means the occupation

layers under the collapsed rampart were thoroughly explored over an area of 1000 square feet, and a section of wall-face, 45 feet long, was exposed.

(9) Section B lies as a whole substantially lower than the corresponding strip of section A. There the crest of the ridge lay 80 feet above datum, whereas in B it was found 3.30 below datum at the east end, and 4.60 below at the western edge. On the other hand the slope towards and under the rampart was gentle—2.80 in 18 at the western end and 5.50 in 16 at the eastern end; the latter incline continued under the rampart to the level of the platform on the south. At the top of the slope bed-rock cropped out in ridges dipping south. The inner face was uncovered for a distance of 45 feet and found to run dead straight.

(10) *The Rampart.*—For the first 12 feet from the western end of section B only the foundation course of the inner face survived. The higher courses and most of the material lying outside them had been entirely removed from the outside, perhaps in the course of tree-planting. The foundation was proved to be only one course deep with no trace of building south of the line of the facing blocks. The basal course consists of flat slabs of sandstone or conglomerate 24 to 30 inches long, 14 to 20 inches wide, and 10 to 9 high, and straight along the inner edge only. They are embedded 4 to 5 inches deep in perfectly sterile sub-soil, sometimes with wedgers in front of them, but the builders have made no attempt to reach bed-rock for their foundations.

In the last 20 feet of the section the wall was standing 7 to 8 feet high, but still only one course deep (fig. 4). The stones composing the higher courses are smaller and less carefully chosen than the foundations. Many are badly cracked, and some have completely disintegrated. There are conspicuous gaps between adjacent stones and courses, but these are generally now filled with chips of stone or sand formed from the disintegration of such. The lowest three or four courses, 2 feet odd in height, are the best preserved and exhibit an outward batter varying from 1 in 6 to nearly 1 in 4. The four to six courses between 2 and 5 feet above the ground slope backward as much as 3 in 8, but as the component stones are themselves no longer horizontal but tilted up, this deviation from the vertical may be attributed to slipping. While the stones in these intermediate courses are not normally more than 9 inches high, the tenth course comprises several blocks exceeding 1 foot in height. Between $4\frac{1}{2}$ and $5\frac{1}{2}$ feet from the ground the solidier stones return to a more nearly horizontal disposition, the wall then running up almost vertically to a height of some 7 feet. At about the latter level a distinct ledge was observed in the easternmost 6 feet exposed: the sixteenth course is set

back fully 3 inches. This ledge need not, however, represent a scarcement, but may be merely due to distortion.

The impression produced by a prolonged scrutiny of the whole exposed face was compatible with the view that the wall had been built up in three or four tiers as a revetment against a core, presumably of rubble.

(11) Six feet of the outer face were exposed 21 feet south of the inner face at the eastern end of the section. Only the foundation course was



Fig. 4. Inner face of south rampart.

intact. It consisted of very large slabs, one being 3 feet long, $2\frac{1}{4}$ feet wide and $\frac{3}{4}$ foot in. It rested on pure sub-soil, not on rock. Two stones that had clearly belonged to higher courses were found $2\frac{1}{2}$ feet south of the foundation, but, judging by the small amount of debris, the rest of the outer face must have been quarried away. Behind (*i.e.* north of) the line of the foundation no trace of building could be seen, the bank, right down to virgin soil, consisting entirely of loose debris including many small pieces of vitrified stone.

(12) *The Occupation Layers.*—From the rock outcrops marking the original crest of the ridge to the base of the rampart's inner face, the loose reddish sub-soil resulting from the disintegration of the conglomerate is capped by a thin crust slightly more bluish in colour and distinctly less porous. It might represent a compaction layer resulting from tramping

about on the sub-soil and actually contains a little charcoal. It passes over almost imperceptibly into a very black and sticky "occupation layer" 5 to 7 inches deep. This is full of charred material, broken bones, pot-sherds, and other relics as well as bits of stone of all sizes, including obvious pot-boilers. A microscopic examination very kindly undertaken by Mr Wallace Thorneycroft reveals that this deposit consisted very largely of a true clay (particles between .02 and .002 mm. in size make up 67.6 per cent. of the fine material) coloured with organic matter and, perhaps, reduced iron oxides. A few lumps of such a clay, fairly clean, were actually discovered in the layer at various depths, but it almost certainly does not occur *in situ* on the hill. It has probably been brought up from the valley and seems similar to the clay used for making pottery.

As we approached the wall-face, the occupation layer was always observed to become deeper, extending to 18 or even 24 inches above the sub-soil about $1\frac{1}{2}$ foot from the wall. The uppermost 6 or 10 inches here, however, while indistinguishable in texture from the rest, comprised no sherds nor artifacts, but immense quantities of broken bones and some charred wood. This topmost black bone-bed does not usually extend right up to the wall-face but is normally separated therefrom by a space 4 to 6 inches wide filled with sand and stones mixed with bones. The bones near the top of the deposit against the wall are the most burnt. Pieces of charred wood may extend across the sandy belt right up to the wall. No continuation of the occupation layer nor of the underlying purple crust was observed south of the inner edge of the wall-face. All relics were obtained in the occupation level, but they might be expected at all depths in it.

(13) Above the true occupation layer dark soil still continues to a depth of from 3 inches, $16\frac{1}{2}$ feet from the wall, to 24 inches near the wall-face. Though sometimes sticky, this "upper black layer" contained no relics and proved on examination to be much more sandy than the clayey occupation layer. Various deposits were found interpolated in it.

(a) Beds of "pinkish clay" overlay the occupation level at various points. They frequently attained a thickness of 5 inches and might extend for a distance of 6 feet, though 2 to $3\frac{1}{2}$ feet was the average breadth for such a patch. The beds tapered off at each end and never reached the wall-face. Superficially this "pink clay" resembles the crust on the sub-soil. Mr Thorneycroft's microscopic studies show that this material really contains very little true "clay" and might well be due to the decomposition of sandstones such as are generally found lying near it.

(b) Stones and slabs, of all shapes and sizes and lying at all angles,

are embedded in the occupation layer and overlying deposits, but none exposed in section B was observed to be fixed in the sub-soil. From 3 to 10 feet from the wall-face beds of flat slabs, lying nearly horizontal and often so loose that gaps still yawned between them, were noted 12 to 9 inches above virgin soil. These slabs generally override beds of type (a) if such are present, but 12 or more feet from the wall they repose on or project into the occupation layer. The general inclination of the slabs under consideration is more nearly horizontal than that of the debris fallen from the rampart. They might once have belonged to some sort of pavement, but if so they have been too much disturbed by the collapse of the rampart to allow us to determine where and on what any such pavement might have stood.

(c) The upper black deposit evidently owes its colour mainly to carbon, and pieces of burnt wood occur in it everywhere. In places bits of logs or boughs were sufficiently preserved for the grain of the wood to be clearly recognised, but even these pieces were so soft that they had been squashed by stones or pierced by nettle roots: details of shape and thickness could not be determined with any great accuracy. The preservation of the timber presumably depended upon local circumstances. The best preserved logs were noted between the top of the slope and points about 8 feet from the wall-face: the logs here were of all sizes and some clearly showed boughs branching off. Most lay above the occupation layer. Two or three were included in the slab bed (b), between 9 and 10 feet from the face and $8\frac{1}{2}$ to 13 inches above virgin soil. Though all logs were carefully planned, no sort of order could be recognised in their disposition. The specimens examined belonged to willow or poplar and birch. The pieces of timber near the wall-base were generally smaller, only 3 to 4 inches thick, and included oak wood. Such might even rest against the wall-face as much as $28\frac{1}{2}$ inches above the virgin soil, probably where moisture collected. At one point three squashed logs or planks of willow or poplar were found lying parallel close together immediately above the occupation layer and 6 inches from the sub-soil.

(d) The topmost layers of black material are always loose and powdery and comprise neither relics nor solid pieces of charred wood. Such a deposit often overlies flat slabs as well as other deposits: in section B4 it was seen lying on a bed of loose powdery red sand and flat slabs with the stone bed described under (b) still lower down. There were gaps in the redder layer in which the black descended into layer (b).

(14) Above the layers just described, an immense accumulation of loose stones was piled against the rampart face. The stones were mainly sandstone slabs similar to those used in building the wall and lay at all

sorts of angles. Close to the wall are slabs resting against it almost vertically, while others at the base of the accumulation are nearly horizontal. Such may be regarded as occupying positions which isolated building stones would take up on slipping off the top of the structure. The rest give the impression of being the result of a sudden collapse when a mass of wall toppled inwards. In any case it is certain that this chaos of stones, burying an occupation layer rich in pottery and bones, has fallen inwards after the occupation of the area. Moreover, the stones can only have fallen from above the existing wall top: they represent the debris of tiers of masonry once rising above those still standing. But all need not have come from an upward continuation of the inner face. On the contrary, the rubble between the wall-faces would also fall inwards and even such courses of the outer face as rose above the level to which the inner face is preserved would, if falling towards the interior of the fort, be found within the inner face. Both in section A and in B comparatively little material slipped from the rampart was observed outside the line of the outer face. Hence a good deal of the outer face may really have fallen inwards to augment the debris against the inner face. The apparent crest of the rampart was often found to run inside the line of the inner face's foundations, and always lies inside the line of its present summit.

No stones in either face exposed in section B exhibited vitrification. Fused stones were found at various levels inside the inner face. But the bulk of the vitrified material, including all large blocks, lay from 4 to 8 feet in from the line of the wall and $5\frac{1}{3}$ to $6\frac{1}{2}$ feet above the virgin soil, often projecting through the turf of the bank. All of these blocks must have fallen from some point above the present top of the inner face and may be derived from outside it. The loose vitrified material behind the line of the outer face cannot be regarded as *in situ* and might have fallen in from higher levels.

THE NORTH RAMPART.

The north rampart was tested in July and August 1934 by a section, C (fig. 2), 25 feet wide, immediately to the west of section A. Digging as in section B towards the rampart, the inner face was reached 21–22 feet from the base of the section and was uncovered to its foundations for a distance of 23 feet. A subsidiary trench on the outer slope exposed 5 feet of the outer face.

(15) The foundation course of the inner face was again composed of very massive blocks 16 to 33 inches in length and 9 to 13 in height. Allowing for the unevennesses of the edges, producing a divergence from straight

of not more than 4 inches, the wall ran dead straight 82° E of N for the whole length of 23 feet. The face was everywhere preserved to a height of $5\frac{3}{4}$ feet, representing 8 to 10 courses of masonry and deviating from the vertical 1 to $1\frac{1}{2}$ feet (fig. 5). The third course was composed of particularly massive slabs separated from the course below by conspicuous but quite irregular gaps. Twelve feet from the east end the wall was standing $9\frac{1}{2}$ feet high. The six courses from $5\frac{1}{2}$ to 8 feet above the ground stood practically vertical, and the top courses nearly vertical but set back



Fig. 5. Inner face of north rampart.

about 3 inches. These courses collapsed during the filling in. At the east end of the section the upper courses had been displaced forwards so much that they could not be preserved; at the western end the corresponding courses had already been broken down before we reached them. In this section too the impression of building in tiers is inevitable.

The outer face rests on virgin soil $4\frac{2}{3}$ feet below the foundation of the corresponding section of the inner face. It was preserved to a height of 5 feet and stands practically vertical. As on the north, the stones used are as a whole even more massive than those employed in the inner face (fig. 6). Gaps between the stones are noticeable, but in some cases at least they are due to the disintegration of component stones. On one stone of the foundation course what looks like a cup and ring mark is

visible in the photograph, but may be a purely natural feature in the conglomerate.

The outer part of the rampart on the north has undoubtedly fallen outwards and slipped down the hill. Under the turf the whole of the



Fig. 6. Outer face, north rampart.

existing slope of 1 in 2 up to the wall-face is composed entirely of debris from the rampart above it. This debris included a number of large blocks evidently derived from upper courses of the face, together with flat slabs from the core of the rampart. It may be regarded as certain that the outer face originally stood at least as high as the inner face, the debris now outside it all the way down the slope being easily sufficient to fill the missing courses. The debris piled against the inner face in section C must accordingly be derived in the main from that face itself and the core of the rampart immediately behind the fallen upper courses.

Actually the accumulation of debris inside the wall is less than on the south and scarcely extends more than 8 feet beyond the base of the rampart. Moreover, the crest of the rampart bank now is not above or inside the line of the inner face, as on the south, but 8 to 10 feet outside that line. It follows that, at its collapse, while part of the rampart fell forwards into the fort, its outer portion slid down the hill.

(16) No stone in either face exhibited any trace of vitrification. Inside section C large blocks of vitrified material, that had evidently fallen from higher levels in the rampart, were encountered only in front of those strips of face where the upper courses had been broken down. Behind the best preserved strip, 11 to 15 feet from the east end, vitrified stones project through the turf on the rampart's crest nearly 12 feet above the foundation of the inner face. When the upper courses collapsed during the filling in, they fell clean away from a large mass of fused stones. The base of this mass lay $7\frac{1}{4}$ feet above the wall's foundations and $3\frac{1}{3}$ feet back from the line of the face at that level. It spread out higher up so that its inner edge, about 11 feet above virgin soil, was only 20 inches back from the line of the face previously mentioned (fig. 3, C'). In this mass the stones near the top were entirely without order but firmly embedded in fused material. Lower down the stones—flat slabs of sandstone—seemed to have been once lying horizontal and were less completely fused. Below the base of the mass, though it was possible to penetrate 5 feet into the thickness of the rampart, no building nor fused slabs could be seen, but the underlying stones showed signs of exposure to heat. Near the east end of the section another block of vitrified material, shown by dotted lines in fig. 3, was exposed *in situ* behind courses of wall that collapsed during excavation. The base of the mass lay almost 7 feet above the wall-base and extended upwards to a height of $11\frac{1}{2}$ feet above virgin soil, being then about 2 feet back from the line of the face as determined by its basal course. The mass was followed back from its inner face through the crest of the rampart for a distance of 8 feet. This mass too tapered downwards at both ends and seemed less completely fused at its base than at its summit. It showed no evidence of having been fused on to the inner face and rested on loose horizontal slabs which, though somewhat cracked or contorted by heat, had not fused. On either side of this block were others which had fallen forward: one to the east blocked the northern end of section A in 1933, while that to the west is shown as it lay in the debris in fig. 3.

Near the west end of the section a large mass of fused stones was exposed behind the fallen upper courses, but seemed itself to have fallen forward and been responsible for the collapse of the masonry in front of

it. Elsewhere small pieces of vitrified stone were found at various levels in the debris, two minute fragments even turning up against the foundation course of the inner face. All the fallen pieces might, and most of them must, have come from positions near the crest of the rampart, 7 or more feet above its foundation. None of the stones visible through chinks in the faces has been fused, the core, as far as it can be discerned, consisting entirely of loose rubble.

(17) As on the south, the sub-soil in section C sloped down towards the base of the inner face, but less steeply (the drop in 20 feet is 4.70 to 7.05 feet below datum at 8 and 4.35 to 6.18 at 22). Throughout the section the loose sandy product of the conglomerate's decomposition was covered by a harder skin, purple in colour. Near the wall this skin is barely $1\frac{1}{2}$ inch thick, but between 10 and 20 feet from the wall it attains a thickness of 4 to 6 inches. In places it was particularly hard and white on the surface, a phenomenon perhaps attributable to the effects of heat.

(a) Relics were rare throughout section C. Practically all the pottery was found within 10 feet of the wall. Between 5 and 20 feet from the eastern edge of the section no pottery and only minute scraps of bone were found inside this limit. A regular occupation layer, comparable to that described from section B, scarcely extended more than 5 feet from the wall. It was distinctly less greasy and sticky to the touch than in section B, and proved on examination by Mr Thorneycroft to contain a comparatively small proportion of true clay; only 11.2 per cent. of the finer particles fell under this head as against 67.6 per cent. in the occupation layer from B. The bulk of the layer in C consisted of sand (88.8 per cent. of the finer particles) coloured by organic matter. As in section B, bones were piled up against the base of the wall, the uppermost pieces having been burnt. However, the total number of bones from section C was only about one quarter of that recovered in section B which is just twice the area. A complete pot had been standing against the wall; its base was found, inverted, 19 feet from the east end. As before the layer comprised many pebbles from the conglomerate, cracked by heat, evidently through use as pot-boilers.

(b) Throughout the section the purple crust of the sub-soil was overlaid by a black deposit comprising large pieces of charred or carbonised wood. Save near the wall this layer, though 6 to 13 inches deep, contained no bones nor relics and is sandy in texture; apart from organic matter and stones it proves in fact to be composed to the extent of 92.4 per cent. of sand with only 7.6 per cent. of "clay." The remains of numerous charred boughs were discernible in the layer: those between 10 and 20 feet from the wall were still remarkably hard and attained a thickness

of over 6 inches in some instances; all examined were of oak. The remains of smaller branches growing out from them were noticed more than once. Two or even three superimposed stems (of oak) could often be distinguished, but a careful scrutiny of the intersections revealed no trace of trimmed joins. In one or two places the logs lay parallel to one another or intersected at right angles, but in general no plan nor deliberate arrangement



Fig. 7. Hearth A and oven in Section C.

could be discerned. The sub-soil immediately under timbers often, but not invariably, showed evidence of heating, and logs were piled especially deep over hearth A. Bits of logs were often found under stones and in contact with the sub-soil. Some of the latter exhibited a skin of unburnt wood on the underside, but none were firmly planted in the ground. About 5 to 6 feet from the wall birch bark was found in small patches right on virgin soil—presumably a sort of carpet. Charred grass and brushwood were also included in the dark sandy layer.

(18) While no structures had been detected in section B despite its wealth in relics, section C produced undoubted architectural remains (fig. 8). A hexagonal hearth, with a sort of oven behind it, was exposed

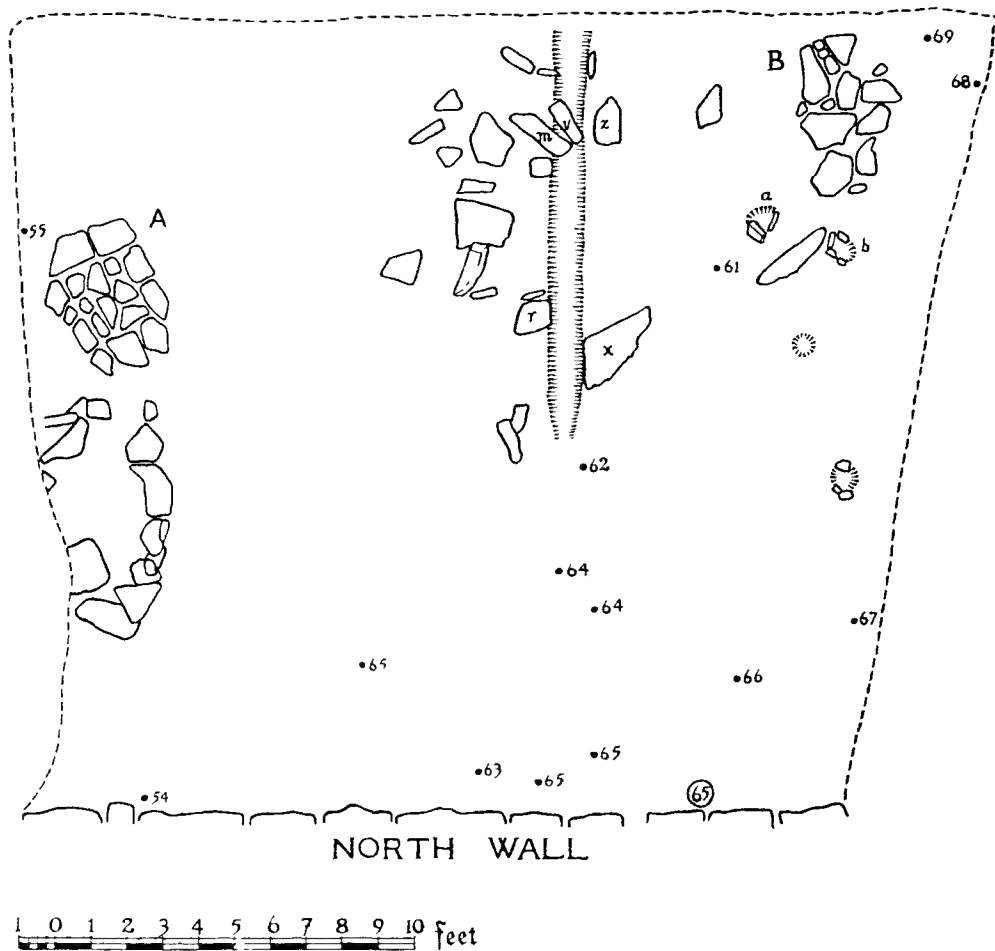


Fig. 8. Plan of Section C. (Find-spots of all relics numbered.)

in the easternmost strip first uncovered, and thereafter no stones that seemed to be in contact with the sub-soil were lifted till they had been planned. Since, however, stones fallen from the rampart covered the whole area, it was extremely difficult to decide which, if any, slabs were actually *in situ*.

The least ambiguous features were two hearths. Hearth A (fig. 7).

12 to 16 feet from the wall and 1 to 4 feet from the eastern edge of the section, was a hexagonal pavement composed of eighteen thin slabs, some cracked by heat, resting directly upon the blue crust. A mass of charred logs was heaped over the hearth and extended several feet west of it, but at its northern end twigs of brushwood were recognised. The soil under the hearth was white and hard, as if baked.

North of the hearth we found remains of a sort of oven, partly disturbed by a strut inserted to support the wall-face. The oven seems to have been about 5 feet long by 3 feet wide and is outlined by a low wall, only some 8 inches high, composed of small stones (measuring on an average 7 by 5 by 4 inches) resting on the purple crust. The oven was filled with sandy black soil including twigs of charred brushwood, but an unworked flint flake was found on its floor.

Despite a determined search for foundations no intelligible remains were found between hearth A and hearth B, 23 feet from the eastern edge of the section. In the intervening space a number of stones seemed at first to be set in the soil, but after photographing and planning most of them proved to cover charred wood or other remains. Nor were any post-holes discoverable. But a shallow trench, 10 to 15 inches wide and about 6 inches deep, runs across the section at right angles to the wall. It had been cut through the blue crust right down to the sandy red sub-soil and was filled with dark earth and pieces of charred wood. The timbers found in it were lying at all angles so that the trench did not serve as a bed for prostrate logs. It is, however, possible that the narrow blocks, *m* and *v*, now tilted, had originally stood upright in the trench like low pillars, and even the thick slab *x* may once have stood on edge in it. The solid blocks, *r* and *z*, now standing about a foot high on the brink of the trench, may have fallen from the wall as the soil under them was black.

Hearth B, 17 to 21 feet from the wall, is again a pavement of thin slabs little over 2 feet wide. Charred logs were found over its northern end where the soil beneath and around the slabs once more showed signs of baking, but the southern end of the pavement rests on an outcrop of conglomerate.

North of the hearth two pits have been dug into the virgin soil to a depth of $8\frac{1}{2}$ inches (fig. 9). Both are lined with stones—pit *a* with two flat slabs on end, pit *b* with a thin slab on the north and two tiers of small stones on the south and east. In both cases the upper ends of the northern slabs are inclined inwards towards the hearth so that any post standing in these sockets would have leaned in that direction. Between the two pits a rectangular slab of conglomerate, 5 inches square in section,

rests on virgin soil. Nearer the wall are two shallower depressions, the first 2 inches and the second $4\frac{1}{2}$ inches deep. Only dark earth was found in these four hollows.



Fig. 9. Hearth B in Section C.

SECTION D.

The contoured plan (fig. 2) will show that there is a marked depression in the north-eastern corner of the fort, east of section A. Originally there must have been a shallow gully here running north-north-west from the axial ridge of the hill, but the rampart runs right across the depression masking its exit from the enceinte. A trial section, D, in the north-east corner of the fort, revealed the inner face of the rampart climbing up from this hollow to the higher ground on the south-east.

(19) Section D exposed a strip of rampart about 15 feet long and slightly curved. A straight line joining the edges of the foundation

stones at the extremities of the section represents the chord of an arc just over 9 inches high. Along this line (running 20° S of E) the sub-soil rises to the south-east $2\frac{1}{3}$ feet (from 10.33 feet below datum to 8). Beginning from the south-east corner the first six foundation stones are very large blocks, the sixth measuring 2 feet 9 inches in length and 16 inches



Fig. 10. Inner face of wall in Section D (the staff is truly vertical).

in height. All six courses slope up towards the south-east in harmony with the inclination of the sub-soil. The seventh foundation is, however, formed of two slabs, the surface of the uppermost being just flush with the top edge of the huge sixth foundation stone. Over both the sixth and seventh stones, the second (third) and remaining courses are set back as much as 8 inches behind their outer edges so that here the foundation course projects like a sort of plinth (fig. 10).

Throughout the section the wall is well preserved, standing well over 9 feet high, with a batter varying from $1\frac{1}{4}$ in 9 to $1\frac{1}{2}$ in 7. The topmost

courses were, however, too unstable to measure. Undoubtedly a great deal of debris has fallen in from above them. The usual pile of debris extends over 16 feet from the base of the rampart and includes large blocks of stones fused together that must have fallen from near the top of the wall. The apparent crest of the rampart now runs some 10 feet out from the line of the inner face and at the south-east corner is 14 feet 10 inches above the foundation course. The outer face may of course rest on appreciably higher ground than the inner, so that in the fall an exceptionally large proportion of the debris might have fallen inwards. Even so the inner face can hardly have stood less than 14 feet high. No stones in the existing face exhibit vitrification, and the fused blocks found inside the section must have fallen in from above the topmost surviving course. Vitrified stone is visible through the turf along the crest of the rampart outside the line of the inner face.

(20) It was hoped that the sunny and sheltered north-east corner would be a good place for relics. This hope was disappointed. The sub-soil was extremely wet and sticky and more yellowish in colour than usual. It covered the foundation courses of the north-west corner to a depth of 9 inches. It had perhaps been dug out to that depth, but disturbance could not be recognised with certainty.

A very few broken animal bones, some burned, were found against the wall-face, but there was no sign of a regular occupation layer nor even of a "purple crust" on the sub-soil anywhere in the section. On the other hand, a bed of large charred trunks and boughs, with branches and even twigs attached, rested on the sub-soil between $1\frac{1}{2}$ and 4 feet from the wall-face. Otherwise neither relics nor foundations were found in section D. Perhaps the slope was too wet to be inhabited.

THE EASTERN WELL.

In 1933 a sounding at the deepest point in the depression east of section A had revealed the edge of an unsuspected well cut in the living rock. The shaft was cleared out in 1934 with the kind assistance of Captain Neish and his staff.

(21) The well at the mouth is an irregular oval some 17 by 16 feet across and has a maximum depth of 21 feet. On the north and east the walls of the shaft at first converge gently towards the centre for a depth of 3 feet and then more steeply for the next 9 feet. About 12 feet below the brim the walls become practically vertical all round and on the north-east even overhang (fig. 11). As the photographs show (figs. 12-13), the original excavators of the well have followed the natural cleavage

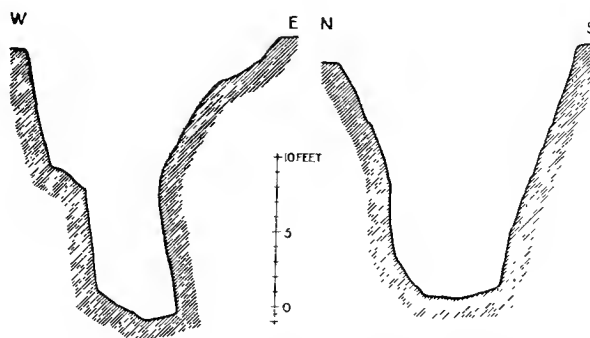


Fig. 11. Sections across the well.

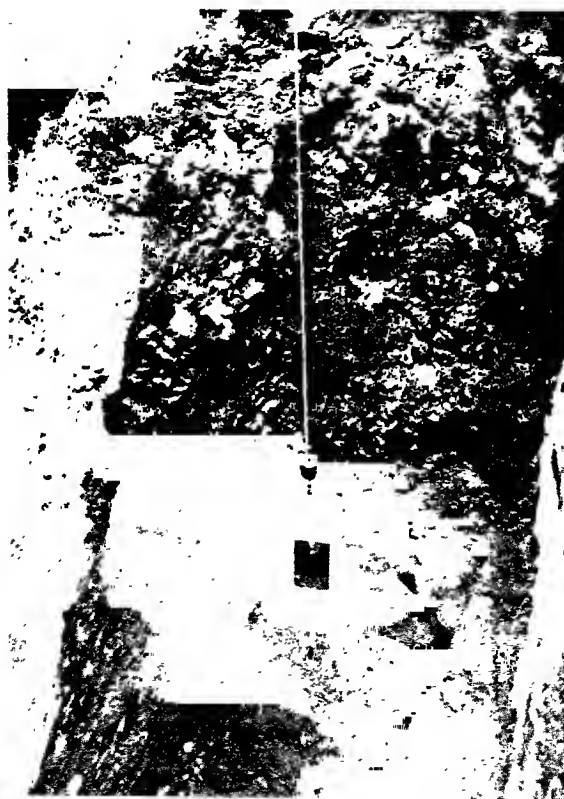


Fig. 12. View down well, looking south.

planes of the rock, what miners term backs. The actual bottom is a very irregular quadrangle about $5\frac{1}{2}$ feet by 5.

The shaft was filled to a depth of 3 feet from the turf with black soil and stones, including a few pieces of vitrified material; a few bones and



Fig. 13. View down well, looking north.

pieces of charcoal were recovered from this deposit, but no relics. Between 5 and 10 feet below the rim the filling consisted mainly of large stones with little earth between them. Small fragments of a human skull, terribly crushed and largely decomposed by the acids of the soil, were found among the stones about 8 feet down and, some 2 feet lower, a thick jet ring. The lowest 12 feet were filled with red soil, similar to the sub-soil of the district, but very wet and clayey and comprising some large stones.¹ This sticky material was spread out on the grass to dry, and subsequently broken up by hand. It yielded no relics save a few

¹ A stout block of hazel wood was on the ledge on the western side of the shaft.

minute but quite characteristic pot-sherds and hopelessly decomposed traces of bones and teeth. No water was found at the bottom, but a little seeped in at crack in the very deepest corner of the north side.

It seems then as if the well was a disappointment to its original diggers as to us. The fort-builders had recognised the gully in the hill side, near the head of which the well was sunk, as a likely place for striking a spring. But their expectations proved vain, and the useless shaft was filled in. The lowest 13 feet at least must have been filled in while the fort was still occupied, and it is most probable that the original filling came up very nearly to the brim of the shaft. Perhaps the well in the gully at the west end of the fort that still contained water in 1812¹ had been dug when the failure of the eastern well became patent. The enceinte may at the same time have been extended by the addition of the rampart connecting the western peak with the main ridge and enclosing the western well. This successful well was in any case dug at the head of a natural gully running out northwards, just as the eastern one had been.

THE RELICS.

(22) Pottery was very abundant throughout section B; in section C sherds were found only in restricted areas, as noted in paragraph 17, but were identical in character with those from section B, as were the few sherds from the well. The vases seem to have been made from a greenish-yellow clay, said to be found in the plain of the Esk at the foot of the hill: unbaked lumps of this clay were found in section B. In the vessels it is mixed with large fragments of angular grit. The vessels made from this material were almost exclusively coarse cooking-pots. The walls frequently exceed 1 cm. in thickness, and bases may be over 3 cm. thick. All vessels have been built up by hand in successive rings, the edge of the lower ring having been bevelled before the next tier was applied; fracture along such joins which have been allowed to dry too soon yield the "false rims" familiar also from Skara Brae and other sites.

The firing has in all cases been imperfect, the heat applied barely exceeding 700° C. Often only a skin on the surfaces has been raised to the temperature necessary to drive out the "water of constitution" and convert the clay into earthenware; the core in such cases is dark and crumbling and disintegrates in water. The majority of the sherds are greenish-yellow on the outside and very soft. A smaller number of sherds are pinkish in hue and rather harder; the same pinkish aspect may be induced on the commoner yellow ware by rebaking, so that the difference

¹ Warden, *Angus, loc. cit.*

in colour must be due merely to variations in the temperature of firing. The interior is often blackened, doubtless through impregnation with organic matter as Mr Thorneycroft has demonstrated.

Owing to the soft and crumbling nature of the ware no vessels could be restored. The dominant form seems to have been a flat-based pot in which the walls expand slightly from the base upward only to contract again at the mouth. The complete base, found in section C, was $8\frac{1}{4}$ inches in diameter and $1\frac{3}{4}$ thick. From the small segments surviving other bases may have been only 5 or 6 inches in diameter. Sometimes

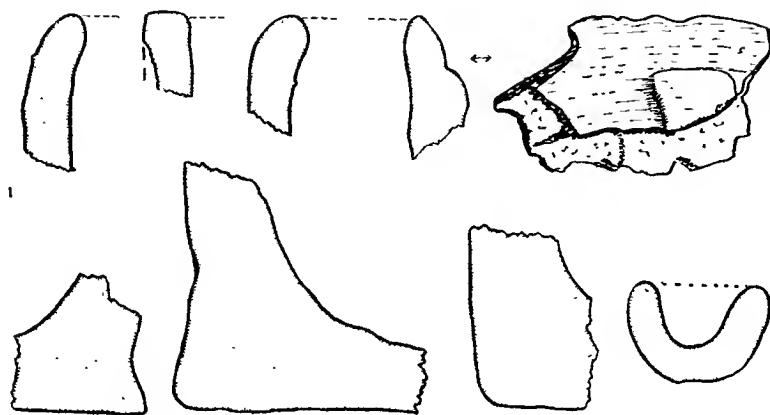


Fig. 14. Sections of rims and bases and of crucible. (1.)

the bases are markedly splayed, but in other instances the walls expand continuously from the base. Of the 25 rims recovered, 24 are quite simply rounded off: only one (found close to hearth B in section C) is slightly flattened on the top. There is a low rudimentary lug below one rim (fig. 14).

Several coarse pots from both sections B and C bear on the walls irregular grooves. Though generally shallow, such grooves may be as much as .8 cm. wide. In several instances irregularities in the cross-section of the grooves show that they have been produced either with the end of a rough stick or by the impression of a stalk of straw or grass. The second explanation is the more probable, for sometimes a skin of clay projects over the edges of the impression. The grooves are generally horizontal but form no sort of pattern. It looks as if strands of straw or grass had been wrapped round the pot while it was being built up and these strands burned away in the firing. Only so can the clay overlapping the grooves be explained (fig. 16).

Such coarse pottery is naturally of small diagnostic value. It may be compared with the pre-Roman ware from Castletlaw, Abernethy, Bonchester Hill, and Dunagoil that is equally coarse and badly fired, but also with the post-Roman sherds from Pant-y-Saer, Anglesey, that are nearly as bad.

In the same greenish-yellow ware as the cooking-pots we found in section B one globular crucible and fragments of three others. The

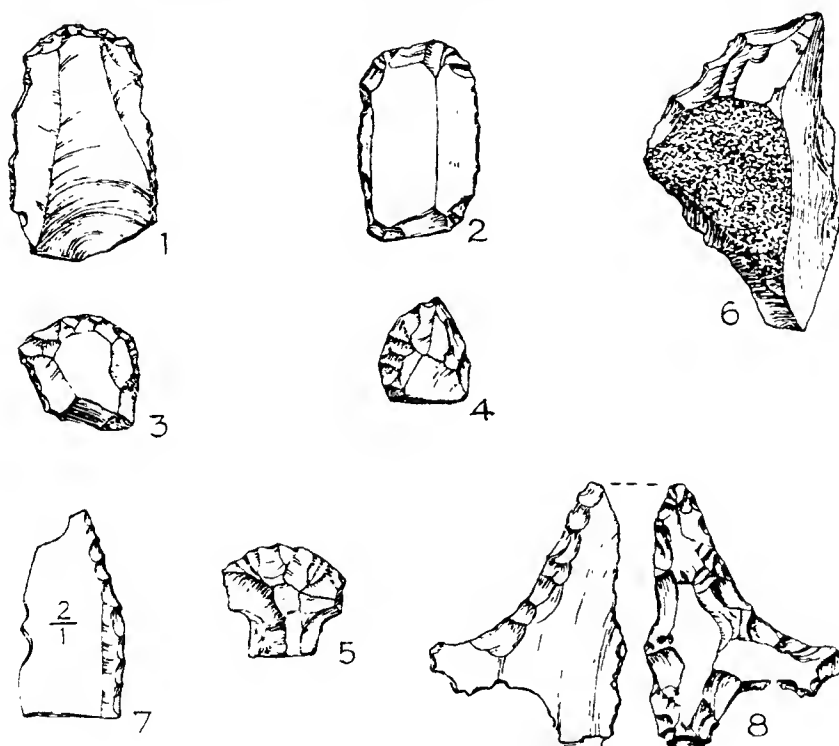


Fig. 15. Flint Implements, all } except No. 7, which is i.

complete specimen is 3 by 2.8 cm. (1.20 by 1.15 inch) wide, 1.5 cm. deep and 1 cm. thick. Our crucibles agree with those from many Iron Age sites, including Dunagoil.

(23) The only objects of metal recovered were a thin iron ring found in the debris of the rampart in section C and a hopeless corroded iron blade found near hearth B in the same section.

(24) Flint flakes and implements (fig. 15) were common all over the site and may even be picked up in rabbit-scrapes. Translucent or opaque white flint as well as yellow and orange-red occurs. The material is

presumably flint pebbles from the boulderclays and may have been worked on the spot. A core was found $1\frac{1}{2}$ inch above the floor level in section C. It is a quarter of a pebble of translucent orange flint with the cortex still adhering on one side. Two sides are flake-scars, the fourth has been trimmed by the removal of six short flakes and used as a scraper (6). Ten other completed implements were recovered. Three (Nos. 3, 4, 5) are "microlithic" thumb-nail scrapers 1.2 to 1.5 cm. long and 1.4 to 1.5 cm. wide along the edge. No. 5 lay 7 inches above virgin soil in the occupation layer, whereas No. 3 was found only just above virgin soil at the base of the occupation layer.

Two, Nos. 1 and 2, are double end-scrapers on "microlithic" blades 2.8 to 2.4 cm. long. No. 2 lay 7 inches above virgin soil in the occupation layer near the wall in section B. In No. 1 the bulb is still in place and the edges as well as the ends show fine secondary retouching. No. 52 is an irregular chip, found 5 inches above virgin soil, one edge of which, 1.2 cm. long, has been retouched to make a scraper. No. 8 is a double hollow scraper found just under the turf near the centre of the fort in section A. I would compare it to the so-called shaft-smoother found in the "Hallstatt" settlement on Castle Hill, Scarborough.¹

Finally No. 7 is a broken lunate, now 1.2 cm. long; the convex back is blunted with delicate retouches in microlithic style.

In addition to the implements, 22 chips, flakes and unworked blades were unearthed at Finavon. Considering the positions in which many of the implements were found high up in the occupation layer, there is no reason to doubt their fabrication and use by the builders of the fort or to regard them as relics of earlier visitants to the hill. Scrapers have constantly been found on Iron Age sites (including the post-Roman hut at Pant-y-Saer); even a lunate was found on Traprain Law. The "microlithic" appearance of the industry is to be explained by the poverty of the material available in Scotland.

(25) Though animal bones were found in enormous numbers and a fair state of preservation, only three pieces had been worked. These are (1) a marrow bone of sheep or deer, split obliquely and rubbed down to a point. The butt had been broken off in antiquity. Two fragments of the marrow bones of oxen have been polished for use as implements but badly shattered before we reached them. In one the bone had been split obliquely and the splintered end rubbed down to a point.

Antler was not common at Finavon. But one section had been sawn off at both ends as if to make a knife handle. The spongy interior has not, however, been hollowed out.

¹ Kendrick and Hawkes, *Archæology in England and Wales*, fig. 60, 8.

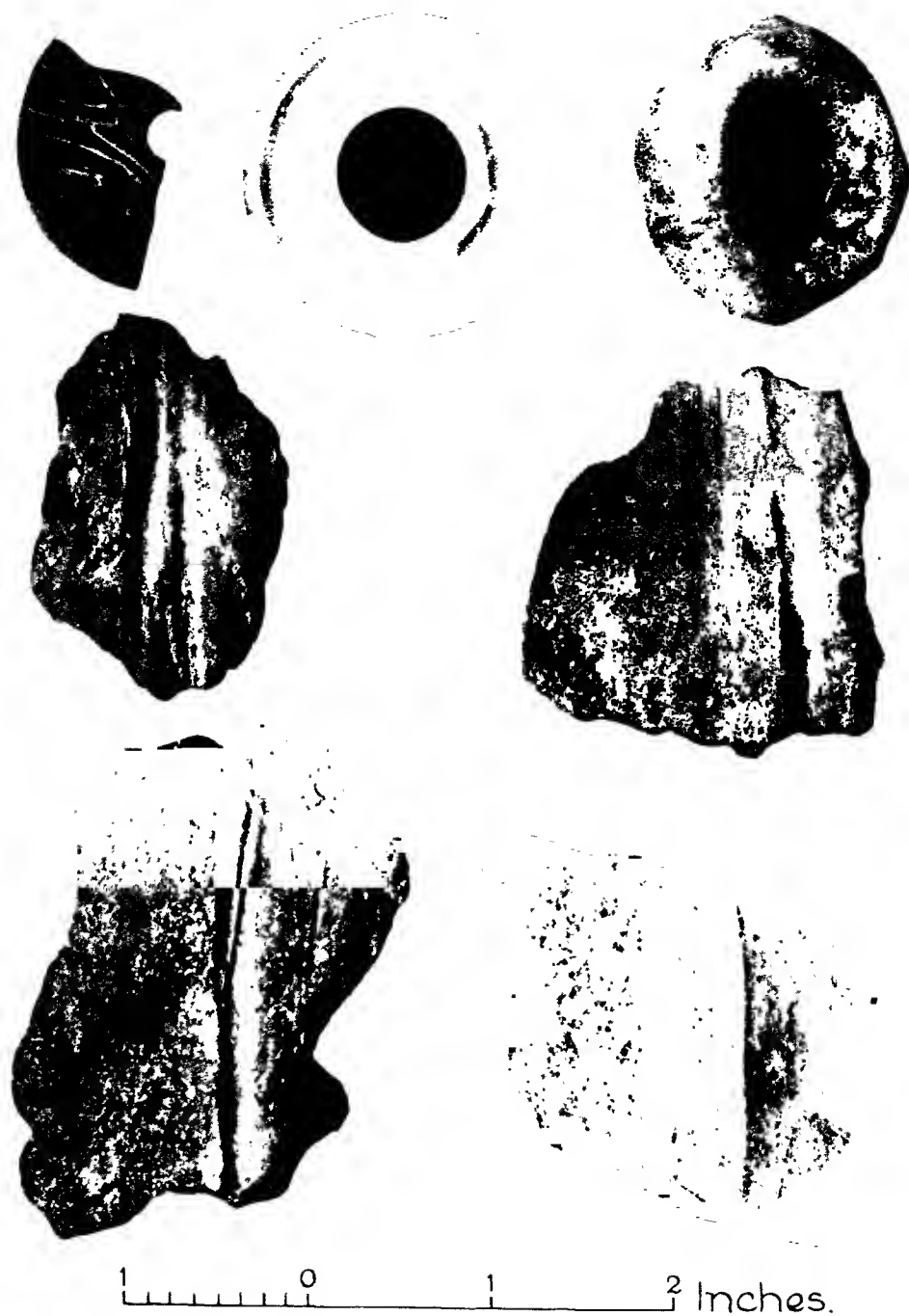


Fig. 16. Jet Ring, Ornamented Whorl, Crucible, and Incised Sherds. (†.)

The poverty of the bone industry, and in particular the total absence of the textile appliances so characteristic of the English Glastonbury complex and allied Scottish material from Borness Cave and the brochs, must be regarded as highly significant.

(26) That a textile industry was actually practised on the site is demonstrated by the discovery of no less than six spindle-whorls. All were flat discs of fine-grained stone, 7 to 9 mm. thick, and all were found in the occupation layers under the shelter of the southern rampart. Only one (fig. 16) is decorated with finely engraved lines.

A stone disc, 4.1 inches (10.2 cm.) in diameter and $\frac{3}{4}$ inch (1.7 cm.) thick, found under the debris of the south rampart in section A may be regarded as a loom-weight. The edges of the perforated, which is 1.2 cm. wide and has been bored from both sides, are, however, quite sharp.

(27) It is remarkable that our excavations produced only one incomplete quern stone. It was found among the debris from the south rampart. The fragment of conglomerate belongs to the upper stone of a rotary quern with a possible diameter of 20 inches. It is now at most $2\frac{7}{8}$ inches thick, but none of the upper surface survives so that the original thickness and shape cannot be determined. It is indeed just possible that our fragment belongs to a quern of the pre-Roman beehive type, though such querns at Glastonbury do not appear to have exceeded 18 inches in diameter.

Several sandstone slabs exhibited hollows pecked or gouged out on one or both faces, but few finished articles survived. The following may be mentioned:

Very rough triangular block of sandstone, $1\frac{1}{2}$ inch thick, $4\frac{1}{2}$ inches long and 3 inches wide at the base. On one face an oval hollow, $2\frac{1}{2}$ by $1\frac{5}{8}$ by $\frac{3}{4}$ inches, has been hammered out: there is a ledge in the hollow at the end nearest the triangle's apex. This might have served for the wick if the whole object had been a lamp. The sides and the base have been left rough and irregular.

A quarter of a stone dish was found in the occupation level in section B. The slab of black stone from which it has been made must have been a rectangle, not quite $1\frac{1}{2}$ inch thick. An oval depression had been hammered out to a depth of nearly 1 inch. The side walls are $\frac{1}{3}$, the base $\frac{2}{3}$ of an inch thick, and the whole fragment now measures 3 by $1\frac{1}{2}$ inches.

A rough slab of micaceous sandstone, $7\frac{1}{2}$ by $2\frac{1}{3}$ by 1 to 2 inches, bears irregular depressions on both faces. The bottoms are very uneven.

Another fragment of sandstone proved to be part of an open mould for casting bronze bars such as are common on Iron Age sites. The groove which formed the matrix for the bar has been carefully smoothed.

(28) The finest relic obtained during the excavations is the jet ring from the well, which is almost perfect. It is 4.3 cm. in diameter outside and 1.3 cm. thick. Plainly it cannot have been worn on the finger. A very similar ring was found in the Gallic fort on Castlelaw, Abernethy, which yielded a La Tène I brooch, while rings equally thick have been found in La Tène I graves in Switzerland.¹

The relics just described unfortunately provide no precise indication of the age of the fort. The total absence of all Roman pottery, glass, brooches or coins would seem incompatible with a date between A.D. 80 and 200. The rotary quern would on the other hand point to a Roman or post-Roman date. Nevertheless, the nearest parallel to our thick ring of lignite comes from Castlelaw, Abernethy, which is definitely pre-Roman. The pottery again has analogies in the same and other pre-Roman sites. The quality of the flint work too might argue a date before the Bronze Age traditions had been blunted by the cheap iron of the Romano-Caledonian epoch.

CONCLUSIONS.

A. Excavation confirms the peculiar elongated plan of the enceinte with almost straight walls. The builders of the fort have adhered to this plan quite regardless of the contours of the hill and in defiance of purely strategic considerations (leaving for example a wide platform on the top of the southern precipice). Surface indications suggest similar peculiarities in the lay-out of other vitrified forts, Craig Phadrig, Cnoc Farril, Dun Macuisneachan, Dunagoil, Carradale, Tap o' Noth. Such a plan is in striking contrast to that generally observed in hill-top towns, small forts and duns where the ramparts are accommodated to the contours of the land. It might have been dictated by tradition or, as Mr Kennedy has suggested to me, merely by a desire to economise material and labour, a straight wall being shorter than one following the sinuosities of the hill. Section D has shown that Finavon was a trapezoid rather than a rectangle.

B. The walls of Finavon were 20 feet thick with built faces, not less than 12 feet high internally and 16 feet externally. These walls are accordingly far stronger than those of any normal hill-top town or dun in Scotland, and can only be compared to the stone and timber ramparts of Burghead, Abernethy and Forgandenny.

C. The vitrification was confined to the tops of the walls extending down into the core only 5 or 6 feet, a fact noted by the anonymous writer

¹ *E.g.* at Andelfingen, grave 17, Landesmuseum, Zurich.

quoted in Warden's *Angus*, vol. v. p. 47.¹ The sub-soil under the rampart, exposed near the western end of section B where the inner face had been broken down, showed no trace of the action of heat. Nor were the faces themselves vitrified, so that the Rev. Headrick's statements quoted in the first volume of the same work are inaccurate. No positive evidence as to the method of vitrification was, however, obtained. In the wide sections of the wall-faces exposed we could see no indications of timbers bonding the faces, such as are quite conspicuous at Forgandenny and Abernethy. Dr M'Clintock of the Geological Survey, London, who examined microscopic sections of vitrified stones for Mr Thorneycroft does "not think that any flux was used beyond that provided by the impurity in the sandstone." Mr Thorneycroft's experiments with the sandstones used in building the ramparts show that a temperature between 1100° and 1150° C. was needed to produce the effects observed on the vitrified samples. Such a very high temperature might have been produced if the space between the walls were converted into a sort of furnace, *i.e.* if piles of wood, mixed with rubble, between the faces were set on fire as suggested by Mann in the case of Dunagoil. An adequate draught would, however, be essential, and the furnace must have been sealed down on top by clay or turfs. Mr Thorneycroft has calculated that half a cwt. of air-dried wood or almost 4 c. feet of cord wood would be required for each cubic foot of rock vitrified.

Positive evidence in support of this account was not obtained: though there were gaps between many stones of the faces, none could certainly be regarded as a deliberately contrived vent-hole to allow access of the draught presupposed by the theory. Nevertheless it must be remembered that the only relevant sections of the walls, the upper courses, were in no case well enough preserved for such vent-holes to be recognisable.

It is tempting to connect with the vitrification the masses of burnt wood found inside the walls all round the fort, even in section D where there were no indications of habitation. The position of the charred trunks, above all other remains of occupation but at the base of the debris from the rampart, is compatible with the belief that they had fallen in from the top of the walls; some, however, in section C and the north end of section A lie rather too far out for this explanation to be plausibly applied to them. Mr Sutherland has suggested the possibility of a breast-work or palisade of stout timbers planted along the rampart tops and plugged with cotton grass or lint beneath a mask of turf.

D. The citadel enclosed within these ramparts was regularly inhabited.

¹ Vitrification seems to have been confined to the upper courses, also at Tap o' Noth, Dun Skeig, Caisteal Aoidhe, Christison, pp. 171-172.

A row of dwellings provided with fixed hearths must be imagined under the shelter of the north rampart. Pot-making, spinning and metal working (crucibles) were carried on under the lee of the south wall, though no built fire-places nor other architectural remains were exposed on that side of the fort.

E. The relics give no conclusive evidence for the date of the monument within the Iron Age, but they are not incompatible with the view that it was erected by an early band of Celtic colonists from the Continent.

In conclusion I have the pleasant task of recording my deep gratitude to many friends and helpers without whose practical assistance the work could not have been carried through. Col. A. D. G. Gardyne, and his tenants, Sir Kirkman Finlay of Finavon Castle, and Mr Findlay of Bogardo Farm, very kindly gave permission for the excavations and rendered practical help by lending tools and extending to us other courtesies. We were fortunate in securing the expert assistance of Messrs Angus and Sutherland throughout the two campaigns. They were assisted in 1933 by Messrs Dixon (Forfar) and Robertson (Tannadyce), and in 1934 by Messrs Craik and Milne (Tannadyce). Miss Stewart, Messrs H. Fairhurst and W. Henderson of the League of Prehistorians, Major and Mrs Deedes (Wiltshire), Mr Mansfield D. Forbes (Cambridge), Mr and Mrs Millett (London), Mr Basil Megaw (Belfast), and Mr John Witt (London) undertook many days of laborious trowelling, and between them rescued most of the relics. To Major Deedes and Mr Fairhurst we owe the excellent contoured plan of the site, reproduced here. Captain C. F. C. Neish of Tannadyce House throughout took an active interest in our work, not only joining himself in the excavations but lending us tools, and on several days the assistance of his whole staff. The Air Ministry very courteously allowed an R.A.F. plane from Leuchars to take photographs of the site, one of which is reproduced here. Mr W. Thorneycroft also gave us the benefit of his practical experience, and has had various tests carried out in his laboratories. We were honoured by a visit from Judge Pryce of Dublin, who helped us for several days, as well as from the Director of the National Museum, and we have to thank the Director of Royal Scottish Museum and the Regius Keeper of the Royal Botanic Gardens for reports by Miss Platt on the animal bones, and by Mr M. Y. Orr on the wood. The costs of the excavation were in part defrayed by supplementary grants for expenses to myself as the Munro Lecturer from the Munro Fund of the University of Edinburgh.

REPORT ON THE ANIMAL BONES FROM THE VITRIFIED FORT
OF FINAVON, ANGUS. By MARGERY I. PLATT, M.Sc., Royal
Scottish Museum.

The animal bones found in this fort consist almost entirely of the domestic varieties. Considerably over half of them are ox, whilst pig and sheep take a subsidiary place and are numerically equal in importance to each other. Among the wild animals represented are the roe and red deer. A single mandible of the long-tailed field mouse completes the wild species, and has no prehistoric significance because of its burrowing habits.

Ox.

Although the bones of this animal are numerous, only one approaches completeness, the rest being mere fragments. This whole bone is a hind cannon, measurements of which are recorded below, and for comparison those of a female ox of small Shetland race.

	Finavon.	R.S.M., Shetland.
<i>Metatarsal:</i>		
Maximum length	205 mm.	204.5 mm.
.. width of proximal end . . .	42 ..	45 ..
.. .. distal end	53 ..	49.5 ..
Minimum shaft	26.5 ..	25 ..

The two kinds compare very closely. It is difficult to draw any conclusions as to the breed of cattle here present on such slender evidence. All the bones as indicated by the fragments are undersized, but this might merely indicate immaturity. Among the numerous teeth collected, however, are many last molars considerably worn, indicating that adult animals were present. In addition a more complete fragment of an adult lower jaw was measured and found to be more slender and not so deep at the level of the last molar as that of a domestic ox preserved in this Museum. The horn cores of the Finavon cattle are rounded in section, short and rapidly become pointed. Hence, so far as scanty evidence goes, the type of ox present in this fort was small sized with short horns. Remains of adults are not numerous, the greater proportion of the bones and teeth being of immature animals.

Pig.

As in the case of the ox, the bones of the pig are very fragmentary. Any complete bones which occur are from young animals. The presence

of worn last molars and a few large tusk-like canines among the teeth betray the fact that adult pigs were there. The majority of these remains are, however, from young specimens.

Sheep.

This animal is represented by fragmentary bones and teeth of which the majority indicate immaturity. Since neither complete cannon bones, skulls or horn-cores have been preserved, it is impossible to state what kind of sheep was present.

Roe Deer.

Three fragments of antlers represent this animal.

Red Deer.

This is merely indicated by an odd fragment of an antler.

III.

NOTES ON SOME DUNS IN ISLAY.

BY PROFESSOR V. GORDON CHILDE, B.LITT., F.S.A. SCOT.

Of the twenty-seven forts and duns marked on the 6-inch O.S. Map I visited sixteen on May 23-25, 1934.

(a) *East Coast.*

(1) Dun Bhoraraic *broch*, on a summit 550 feet above O.D. and $\frac{3}{4}$ of a mile from shore commanding a superb view up the Sound of Islay to Colonsay and Mull, across the island to Loch Indall, the Rhinns and Ireland and down the Sound to Kintyre. The entrance on the south-east is well preserved, the passage being 13 feet long and 2 feet 4 inches wide at each end, but widening out at centre. To the left is a cell, entered from the door-passage. The corbelling of the roof is visible though the capstones have fallen in and the floor is choked with stones; dimensions above these 8 feet by 4 feet 6 inches. The court is choked with fallen stones and exact diameter is uncertain. The outer face of the tower wall on the south-west has fallen down the precipice, but elsewhere its base at least is well preserved. In the thickness of the wall on the left (south-west) side are traces of the stair. A little further round a passage leads to a cell, the corbelled inner wall of which is exposed by the collapse of the outer wall. A signal station with concrete piles has been built over the broch wall on the south (left). There are no certain traces of outworks.

(2-6) Five duns in $3\frac{1}{2}$ miles of coast between the east spur of Beinn Bheigeir and the south-east corner of the island form a group.

(2) Dun on Carraig Mor below Maol Ardtalla. A promontory, 100 feet long by 50 feet wide, rising sheer about 25 feet from water's edge with narrow coves or crevices on either side, is cut off by two well-built stone walls, 43 feet apart—traces of an intermediate wall. Above the neck the land rises quite steeply to the 200-foot contour.

(3) Dun at Rudha Bhuidhe (north of Claggain Bay), 1.1 mile, south of (2), but not visible therefrom. A triangular promontory, rising 10 feet or so from the water and about 45 feet long, with a cove on the south side and a sandy bay to north, cut off by a double stone wall, quite unmeasurable. Behind, the ground rises steeply to the 50-foot contour.

(4) Dun, *vitrified fort*. Trudernish Point, just under 1 mile, south of No. (3) and visible therefrom. The rocky promontory, about 30 feet above the water's edge, is cut off by a strong wall now a mass of rubble in which several of the stones are partially fused and some form typical vitrified agglomerations. Outside this are two massive walls, double-faced with traces of good masonry in castle style. They are not strictly parallel to the vitrified rampart and may have been built on to it.

(5) Dun, Mulloch Ban. The highest of several isolated rock peaks midway between Aros Bay and Port Mor and less than $\frac{1}{4}$ mile from shore, is girt with a massive stone wall, the over-all area being about 100 feet by 83 feet. Doubtful traces of a fosse and outer rampart on the slope at the north-east end.

(6) Dun, Ardmore. From the flat ground at the head of the rock-girt bay of Port na Cille a mass of rock rises vertically about 12 feet on the landward side and 18 feet from the water. A massive stone wall encircles its summit with an over-all area of 66 feet by 30 feet, clefts in the rock being carefully blocked by well-preserved walls. At the north-east end a built stair leads from the land through a cleft into the interior.

(7) Dun Fhinn, on wild moors above Kintour river, about $1\frac{1}{2}$ mile from the shore at Aros or Claggain Bay and over 200 feet above O.D., was not visited.

(8) An Dun, in the grounds of Kildalton House. An isolated rock about 50 feet above O.D. and 25 yards from the shore of Loch a' Chruic, has been girt with a well-built massive wall. The interior has been made into a garden look-out and the walls have been as a result too much disturbed for measurement.

(b) *South Coast.*

(9) An inland "site," over 200 feet above O.D. and nearly $\frac{3}{4}$ mile from shore at Ard Beg, was not visited.

(10) Borraniebill Mor, just a mile from the shore at Port Ellen. A bare rocky summit, 450 feet above O.D., is protected on the south and east by a massive double-faced wall, very well preserved and 8 feet thick, and on the other sides by precipitous cliffs. There is a small gate on the south-east certainly not more than 6 feet wide (only one face of the passage was exposed). The interior, very uneven and broken by tall rock outcrops, could not be measured, but probably comprises 1 to 3 acres.

(11) Dun, Mull of Oa, cliff fort, not visited.

(c) *Central Islay.*

(12) Dun Nosebridge ? *vitrified fort*, Mulindry, overlooking upper Laggan valley. An isolated eminence rising above the cultivated lands, is crowned by a rectangular citadel (with rounded corners) 96 feet by 55 feet from crest to crest of the well-marked rampart. The entrance is in the middle of the north end. The rock falls away sheer on the east, but the slopes elsewhere are defended by two ditches with counterscarp banks, and at the south-west corner by four. The stone ramparts are entirely grass-grown and no traces either of vitrification or of building were exposed, but the form of the citadel recalls Dunagoil, Carradale, etc.

(13) Dun Ghuaidre, Kilmeny. An isolated eminence rising to just over 300 feet above O.D. from cultivated fields, is entirely encircled by a massive-built stone wall enclosing an oval or subrectangular area 110 feet by 54 feet. In the centre is a square stone foundation about 10 feet square. On the south the rock falls away sheer. On the other sides there are two ditches cut in the rock defending the slope. The entrance is at the south-east corner where a narrow causeway has been left between the cliff and the ends of the ditches.

(14) Dun Cheapasaidh Mor, Ballygrant, over 300 feet O.D., 1 mile north of No. 13 and visible therefrom, apparently a "hill-top town" like No. 10, not visited.

(15) Dun Bheinicheltun, not visited.

(16) Site on Borichill Mor, not visited.

(d) On the moors between Loch Indall and Machair Bay (west coast) are five duns, of which a group of three near Loch Gearach were alone visited.

(17) Dun Glas an Loin Ghuirm. One of several small rocky eminences rising from a marsh, with its summit girt by a well-built but ruinous wall enclosing an over-all area 50 feet across. Vague suggestions of outworks at the foot.

(18) Dun Mideir, $\frac{2}{3}$ mile north of No. 17, a rocky peak 300 feet O.D. of about the same dimensions as No. 17 and girt with a similar wall, but with traces of a cross wall dividing it and with later walls running up to the cliff's base.

(19) Dun Bhar-a-chlaom, $\frac{4}{5}$ mile north-north-west of No. 18. An isolated rock above a swamp with high ground behind it, girt on top with well-built stone wall. Over-all area less than 35 feet across.

(e) *West Coast.*

(20) Dun an Nighean, not visited. Apparently a cliff fort.

(21) Dun Chroisprig, perched on a spur about half-way down a 200-foot precipice, and about 50 yards from sandy shore. Most of the stone wall has fallen down the precipice.

(22) Dun Bhoraraig, Rudha na Faoileige, north of Lossit Bay. The headland that rises precipitously 150 feet above the sea and 10 to 20 feet above the swampy hinterland is cut off by a massive-built stone wall. In the cliffs on the south side is a narrow cove accessible down a steep slope through a cleft outside the ramparts.

(23) An Dun, Rhinns Point, evidently a cliff fort, not visited.

(f) *West Shore of Loch Indall.*

(24) An Dun, Octafad, a rock girt with well-built stone wall, with over-all width of about 30 feet, rising sheer some 40 feet from water's edge. Coves in rock clefts on either side. Behind, the ground rises steeply to 200 feet O.D.

(25) Rudh an Duin, Port Charlotte. The lighthouse stands on the site of a cliff fort.

NOTES.

Only Nos. 10 and perhaps 14 approach in size or situation a hill-top town as I define such. The masonry of No. 10 is perhaps rather coarser than in most of the "castles."

Nos. 12 and 13 are closely allied in structure and situation. Both stand close to good agricultural land.

The other forts visited can only be classed as "castles," but in No. 4 the vitrified wall may be older than the typical castle masonry. No. 1 is the only broch yet recorded on Islay. It is worthy of preservation both for its beautiful situation and its comparatively good condition. None of the remaining castles stand on land now thought fit for cultivation, but there are old crofts between Nos. 17 and 18. Nos. 2, 3, 6, 8, 22, 24, 25 are admirably suited to be pirates' strongholds, with coves hidden in chasms of the rock where coracles might shelter. It is noteworthy that Nos. 2, 3, 21, 24 are overlooked by high ground immediately in their rear.

IV.

AN ACCOUNT OF THE EXCAVATION, ON BEHALF OF H.M. OFFICE OF WORKS, OF ANOTHER PREHISTORIC DWELLING (No. V) AT JARLSHOF, SUMBURGH, SHETLAND, IN THE SUMMER OF 1934. BY ALEX. O. CURLE. C.V.O., F.S.A.Scot., F.S.A.

During the course of the excavation of Dwelling No. i in 1932, it was ascertained that indefinite remains of building were hidden under many feet of sand at the outer end of the original entrance passage. At the close of last season's exploration the foreman, before leaving, cleared away a deep accumulation of superincumbent material in order to facilitate research when the excavation was recommenced this summer.

On resuming work the evidence of structure actually exposed was found to be rather disappointing, but at one end of the area there was laid bare the top of the wall previously located trending eastwards into uncleared ground.

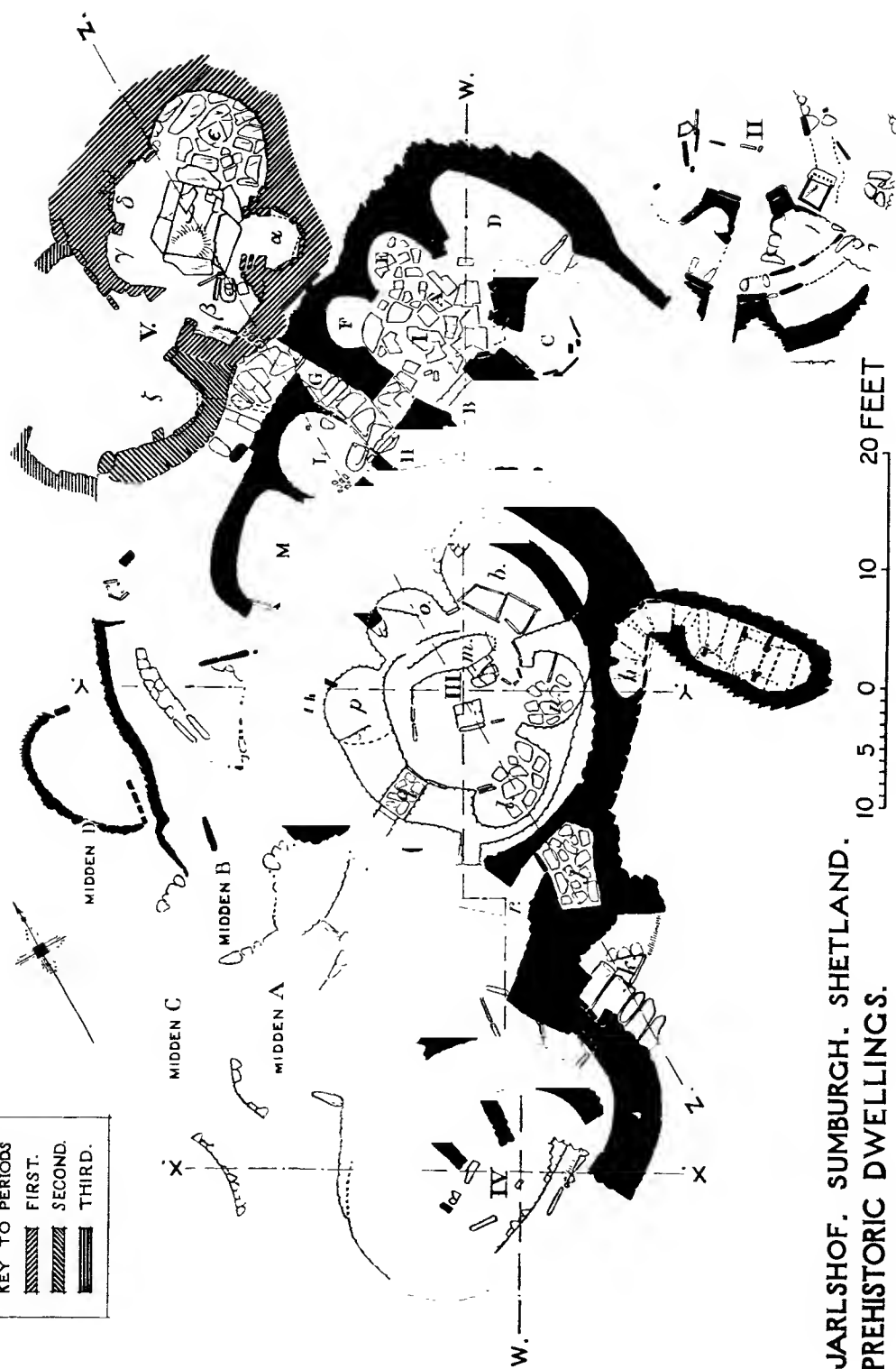
After some preliminary exploration at a higher level, when considerable foundations of a late mediæval building were exposed, excavation was proceeded with along the line of the aforesaid wall, and this led finally to the clearing of another dwelling, No. v of the prehistoric group (figs. 1 and 2).

Immediately above the wall-head lay a bed of dark-coloured soil, 2 feet in depth, and free from intermixture of stones, or other debris, representing the accumulation of sand converted into humus during the lengthy period that must have elapsed between the abandonment and ruination of the dwelling, and the occurrence of a subsequent settlement on the site. The period of the latter was represented by burnt broken stones and peat-ash, to a depth of some 15 inches, resting on a bed of charcoal from 1 to 2 inches thick, largely composed of small twigs, probably of heather. This deposit in all likelihood was referable to the period of the Norse occupation in the ninth or tenth century, great quantities of similarly burnt broken stones being subsequently found in the adjacent Norse settlement. Higher still lay much debris from the ruin of the mediæval building.

When cleared the dwelling was seen to consist of two portions—an inner and earlier section, and an outer and later court.

The former presented a fairly close analogy on plan to the dwellings

DWELLING No V;
KEY TO PERIODS
FIRST.
SECOND.
THIRD.



JARLSHOF, SUMBURGH, SHETLAND.
PREHISTORIC DWELLINGS.

Fig. 1. Plan of Group of Prehistoric Dwellings Nos. I to V.

Nos. i and iii previously excavated, in that it consisted of a central court, a terminal chamber opposite the entrance (ϵ on plan) lying at right angles to the main axis of the dwelling, and lateral cell-like chambers, two on one side (a and β), and probably in the original plan, two (γ and δ) on the other.

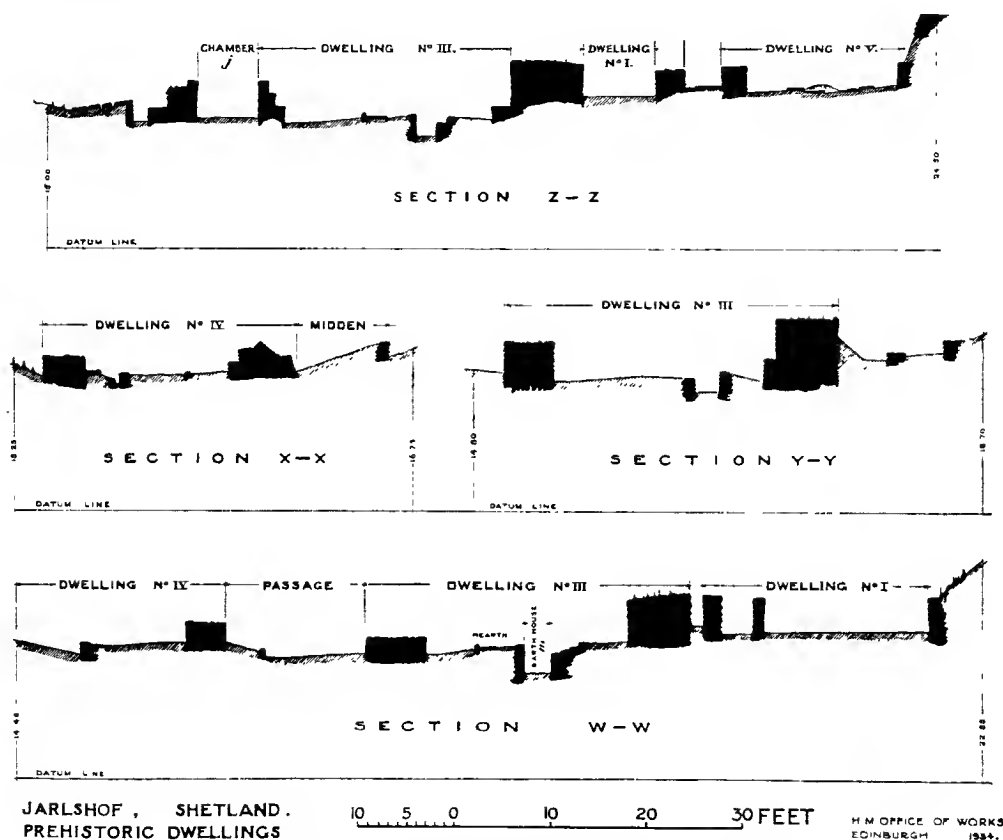


Fig. 2. Sections through Dwellings Nos. I to V on Fig. 1.

From front to back this inner portion measured 17 feet 4 inches, while between the fronts of the lateral chambers the breadth was 9 feet 6 inches. The terminal chamber measured 10 feet in length by 6 feet 6 inches in breadth: the lateral chambers a and β —the former rounded at floor-level, the latter straight-sided—measured respectively 5 feet, and 3 feet 6 inches in both directions (fig. 3).

The entrance to this portion of the dwelling was much broken away, but as far as ascertainable it had measured some 3 feet in width.

Towards the centre of the floor was a rectangular area, measuring 6 feet by 3 feet 10 inches, and surrounded by heavy flags laid on their sides (fig. 4). When first uncovered, the peat-ash on the surface of this area clearly indicated its use as a hearth. On removing the ash, two



Fig. 3. Inner and Earlier Section.

layers of paving were uncovered beneath, which, however, had been disturbed at the inner end. Wondering whether this enclosure could possibly have been a well, for the surrounding flags were not laid on their edges as is customary in a kerb for a hearth, an examination was made of the soil beneath. This was found to be black, and greasy to the touch. It had been observed that the paved floor of the terminal chamber was dished, as if to direct the flow of water, or other liquid, towards the centre of the dwelling. The condition of the soil beneath the secondary hearth

at once provided the explanation of what had previously been baffling. Here had been a tank to receive the urine from animals standing in the end chamber, and possibly also used at the same time as the site of a manure-heap. The flags around the area kept the sides dry, and pre-



Fig. 4. Enclosed Area in Inner Section.

vented the edges from breaking down. Additional evidence of the presence of an animal in the dwelling was furnished by the discovery of the vertebra of a whale (fig. 5), inserted into a wall which had been built, probably for the purpose, across the lateral chamber γ , on the north side of the court.

The vertebra, placed at about 2 feet above the floor-level, was so set in the wall that the side of the canal down which passed the spinal column, protruded from the wall-face, and so provided a loop to which a

tether could be affixed. The actual vertebra, though complete when found, was in a disintegrating condition, so a fresh bone of almost identical size, fortunately found at the back of a crofter's house, was procured, and has been substituted for the original.



Fig. 5. Whale's Vertebra inserted in Wall (centre of fig.).

On the opposite side of the court, and partially in front of chamber β , lay the quern used by the household for grinding their grain (fig. 6). No rubbing-stone was actually beside it, but one found a few feet away was obviously the original article and was replaced. The quern, measuring 2 feet 3 inches in length, was of the type universally found in this group of dwellings, a heavy oblong stone, which, when subjected to considerable wear, resembles a trough from which one end has been removed—hence the term "trough quern" has been applied to it.

Unlike the usual quern found in the course of the excavations, which

was frequently lying inverted, this one lay in the position in which it had been carefully placed, and steadied. A heavy stone lay against it to keep it stable, extending from the wall of the adjacent chamber on one side, while a thin slab was fixed in the ground in contact with it on



Fig. 6. Quern Stone with its Rubber, *in situ*.

the opposite face. The quern was set with a considerable slope towards the front and an inclination to the right, so that the meal, as it was produced, should be directed to a shallow groove cut in the front edge, which acted as a channel to conduct it into a small triangular compartment, formed with thin stones set on edge, and closed where there was an open angle, with yellow clay. Similar material lay spread on the floor of this pocket with the obvious purpose of keeping the meal free from impurities. Set at an angle to the slab alongside the quern on the right was another slab, similarly on edge, making as it were a corner in which

a receptacle holding the grain could be placed within easy reach of the grinder at the mill.

In order to prevent the loss of grain, no doubt a precious commodity, or, perhaps, to afford greater stability, a large lump of clay (visible in the



Fig. 7. Pots of Steatite, *in situ*.

illustration) was placed at the junction of the supporting stone with the quern on the left.

Clay was evidently in considerable request. In chamber *a*, along the east wall, there lay a flagstone supported at one extremity on the small caudal vertebra of a whale packed in at base with small stones, beneath which was a bed of yellow clay, measuring some 12 inches in breadth and several inches in depth, evidently a store of material.

On the west side of chamber *β* was a narrow bench, formed between a large flat boulder and the wall, whereon was found a collection of four

small four-sided steatite vessels (figs. 7 and 8). Three of these appeared to have but newly left the maker's hands when placed where found, as they were free from any signs of use. Two of them, inverted, stood on



Fig. 8. Four Pots of Steatite found in Chamber.

pieces of slate, while the third, also inverted, rested on a discarded vessel, the bottom of which had been knocked out or worn away. Possibly the fresh pots had been set aside to harden, as steatite toughens by exposure, before being put into circulation. Two of the vessels were broken when found, but were easily put together again.

A large slab placed on edge lengthways near the centre of the wall at the back of chamber *a* (visible in fig. 4) is an unusual structural feature.

An outer court (fig. 9), measuring 13 feet by 17 feet, as shown on the plan, had been added to the original dwelling in a subsequent occupation, to be used, probably, for the accommodation of such animals as the inmates of the dwelling possessed at the time when the site of the former manure heap was converted to a hearth.



Fig. 9. Outer Court.

Evidence of this was a drain, passing through the south wall out of a small angular access. It measured at intake 1 foot in height by 5 inches in breadth, and where it left the wall on the other side, 1 foot 8 inches by 7 inches. Originally it had been carried beyond the wall, its course being marked by two flags set on edge 10 inches apart, and a flag forming a floor. Later on, when a third occupation of the site came about, this drain was abandoned, filled up, and covered beyond the wall-face so as to serve as a step on a stair, which was then con-

structed leading down to Dwelling No. i (fig. 10). Within the dwelling the intake still remained open, and when found it contained a collection of shells of limpets, a couple of fish vertebra, some teeth of oxen, and a spatulate tool of stone. When originally constructed this drain must have debouched on ground unbuilt on, otherwise it would have



Fig. 10. Stair to Dwelling No. i.

delivered its effluent directly into chamber L of Dwelling No. i. It is thus evident that Dwelling No. i did not exist either during the first or second periods of occupation of Dwelling No. v, but that it was a later construction at the time of the third occupation, when the two dwellings were connected by a passage and stair. Moreover, the sherds of pottery, referred to hereafter in describing the relics, found on the floor of the later extension of No. v, bore a close resemblance to wares found in No. i.

The stair which consisted of five steps was neatly formed with flat beach stones for treads, 2 feet 3 inches in width, and from a higher level, curved round to the right into the passage leading to the original entrance to No. i.

In clearing away the sand, which covered the stair at the turn, and some 5 inches above a step, there were found eight pieces of sword moulds of clay. These were evidently some of the discarded fragments from the moulds broken up in Dwelling No. i. and thrown over the wall as explained in a previous report. No fragments of moulds were found in any part of Dwelling No. v. It is therefore evident that that dwelling had long fallen into ruin, and been covered with sand when the sword-smith arrived to manufacture the weapons and tools of bronze.

The original entrance to this outer court was marked by a very large quern stone, showing little indication of use, set up on end pillarwise, on the south side, and shown in the background in fig. 9. Though the opposite portal had disappeared its bed was still recognisable below the surface, filled with cleaner sand than the discoloured material that covered the floor. Across this entrance at a later date a thin wall, as shown on plan, had been constructed, which had, apparently, curved round and met the west wall of the original dwelling, but owing to the proximity of the "Jarls-hof" gable further exploration of its course was impossible.

The Relics recovered from the site were not very numerous, and in general character resembled those found at the lowest level of the other dwellings. Slate knives, slate saws, quartz scrapers, and spatulate tools of slaty stone, were all found, but the slate knives and saws (fig. 11) were more numerous than elsewhere, there being thirteen of the former class represented by complete tools or parts, and twelve of the latter. Quartz scrapers were fairly common, nine being found. On the other hand, there was a marked absence of the various rude stone implements such as clubs, "hatchets," etc., found on the other sites. Part of only one handled club was found. A group of six very rudely fashioned spatulate tools of slaty stone, five of which are illustrated (fig. 12), were found together in the inner section. Hammer-stones in the form of abraded pebbles, as recovered in such quantities, especially from the later levels in other sites, were absent from this dwelling. Three round hammer-stones, two of them of quartz, were alone found.

Bone artifacts were not common. In all, nine were recovered (fig. 13). Of these five came from the inner portion of the dwelling, and four from the outer just in advance of the position of the entrance to the former.

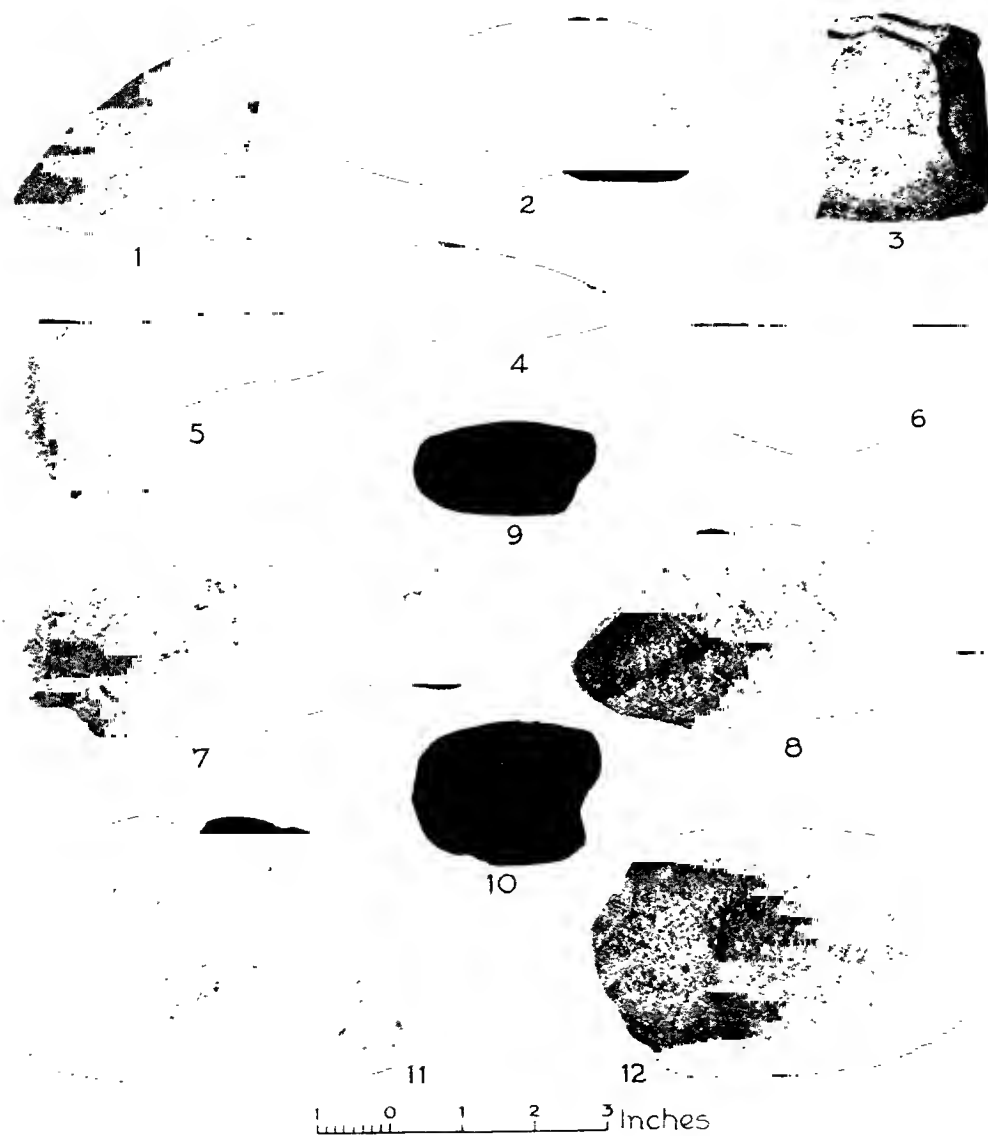


Fig. 11. Implements of Slate.

They are piercers, with one exception (No. 1), which is a chisel-like tool made from a cannon bone, and furnished with a socket. The cutting edge is amissing. It is of lighter make than the socketed chisels found in later dwellings which, as a rule, are made from larger bones.



Fig. 12. Rudely fashioned Implements of Stone.

The most remarkable relic was a stone object found in the centre of the original dwelling (fig. 14). It measures $3\frac{1}{2}$ inches in length by 2 inches in depth. In shape it is oblong, with flat sides, ridged and bevelled on the top and at one end, rounded at the other end and on the under side.

which is also slightly concave in the centre. The bevelled surfaces point to the object having been used as a polisher. Another smaller object,

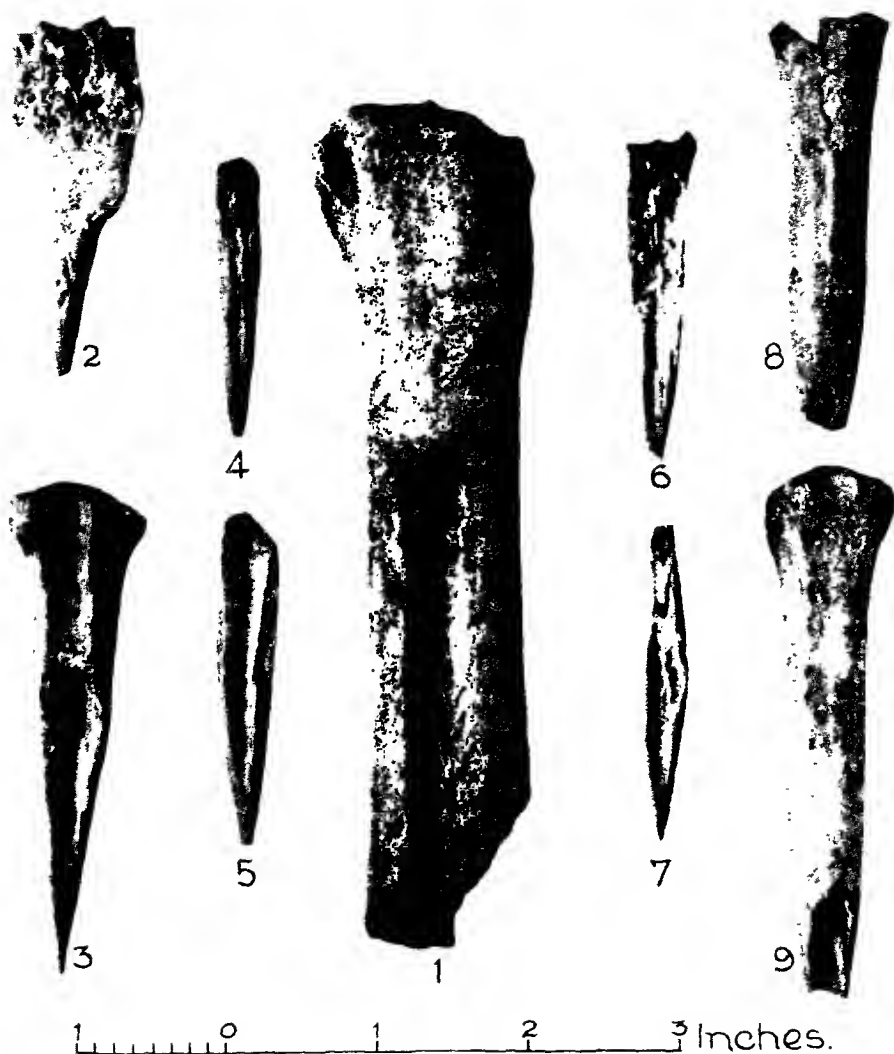


Fig. 13. Implements of Bone.

measuring 2 inches in length, found likewise in the original house, has also obviously been a polisher (fig. 15). It is coffin-shaped, due, however, to the fact that it has obviously been fashioned from the corner.

at base, of a four-sided vessel of stone, a sooty discoloration being still visible on the exterior. The edges have been rubbed to a bevel. Numerous pieces of pumice, which had been used as abrasive, were found at various levels.

Several pieces of heart-shaped perforated slates, common in the other

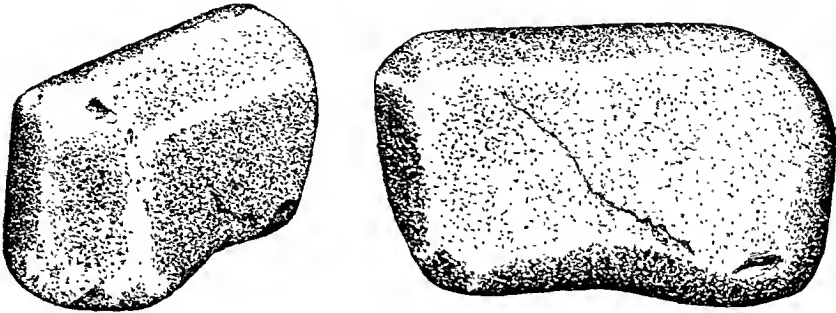


Fig. 14. Stone Polisher—two views. ($\frac{2}{3}$.)

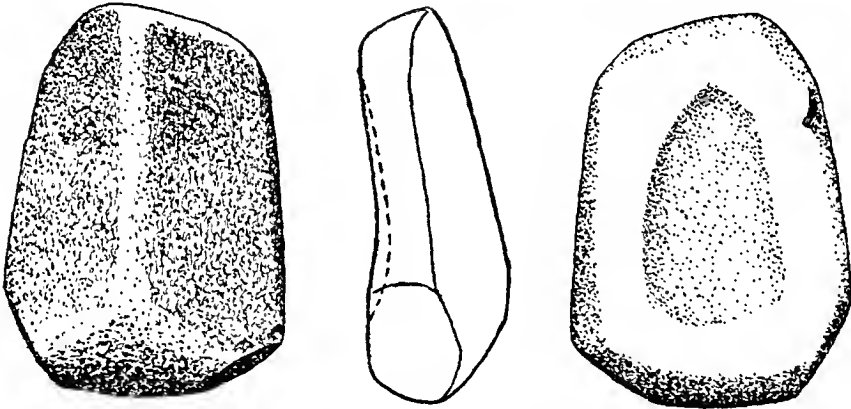


Fig. 15. Stone Polisher—three views. ($\frac{1}{2}$.)

dwelling, were recovered—chiefly from the end of the inner section. One in complete condition (fig. 16) was found standing vertically, point downwards in the sand, and one almost complete, with two or three imperfect examples had been employed to supplement the paving. In Dwelling No. i one of these objects was also found standing vertically in the sand as if it had fallen from above.

At the entrance to the original dwelling there was found an exceptional specimen measuring only 5 inches across (fig. 16), in place of 8

or thereby in the usual examples. The perforation is correspondingly reduced, and is too small for the insertion of more than a couple of fingers of an adult's hand. The pointed end is slightly worn as if by use.

Relics were found at the level of the wall-head as well as on the floor.

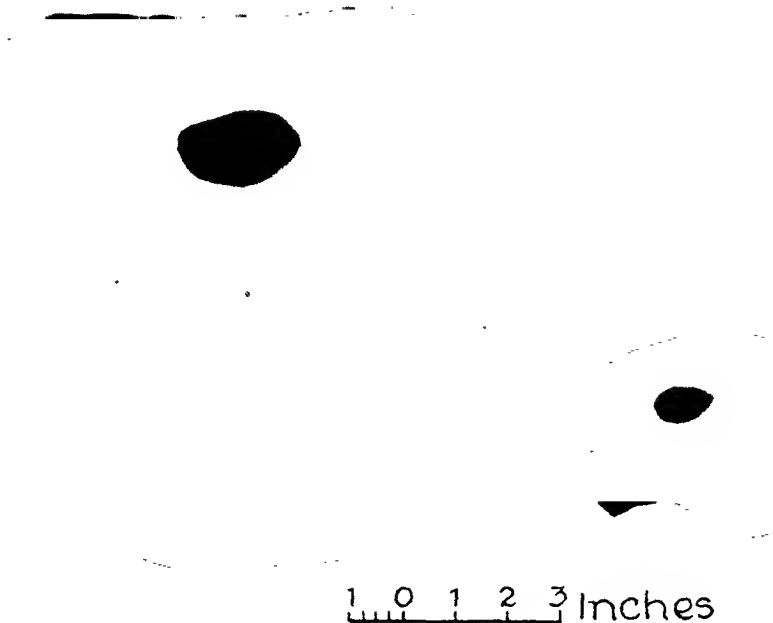


Fig. 16. Shovel-like Implements.

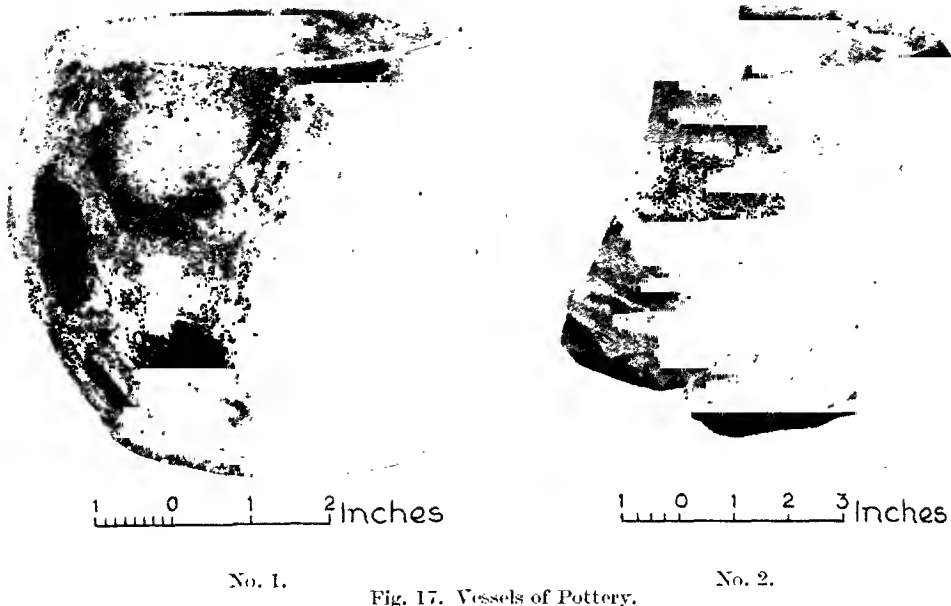
with no apparent difference in character between them. The knives and saws illustrated in fig. 11 were found as follows:—

Nos. 1, 9, and 11 came from the floor of the inner section; Nos. 2, 3, 5, 7, and 8 from the outer section; No. 10 from the entrance; and Nos. 4, 6, and 12 from the level of the wall head on the south side of the inner section. The head of an iron rivet, probably of the Norse period, and another piece of iron were found at floor-level. Presumably they had been in a wooden post driven into the ground at a much later date, as they obviously had no connection with the dwellings.

There was not much pottery recovered. From the site of the hearth, above the midden, in the original dwelling, came a number of sherds



belonging to a cooking-pot which has been reconstructed (fig. 17. No. 1). It is of dark material, containing much steatite in the body and measures $5\frac{1}{4}$ inches in height and the same in diameter at mouth. Sherds of another and larger vessel which has been partially reconstructed, found just above floor-level, has measured $8\frac{1}{4}$ inches in diameter at the mouth, and is of a pinkish-buff colour, with little or no steatite in the body, and is remarkable for a bulge at the shoulder-level (fig. 17. No. 2) giving it



an ogee outline. Unfortunately no portion of the base was recovered to supply a complete section. From the secondary court in front of the original dwelling there came a portion of the base of a vessel, of a purplish tint, and heavily loaded with steatite. It bore a very close analogy in colour and composition to a sherd found in excavating Dwelling No. i. From the same position there came some pieces of hard red ware, with unusually thick bases (fig. 18), and several pieces of a large pot with incurving rim and very vesicular texture, both analogous to wares found in No. i.

The facts that the freshly fashioned steatite vessels should have been left untouched after the house was evacuated, and that the quern should be still *in situ* as placed, seem to indicate, not only that the

dwelling was suddenly abandoned, but also that no marauder seeking booty had visited the site ere it fell to ruins, and the mantle of sand had enveloped it within its folds.

The close similarity of the relics from the level of the wall-head to those from the floor, suggest also that no great lapse of time occurred in the covering of the ruin.

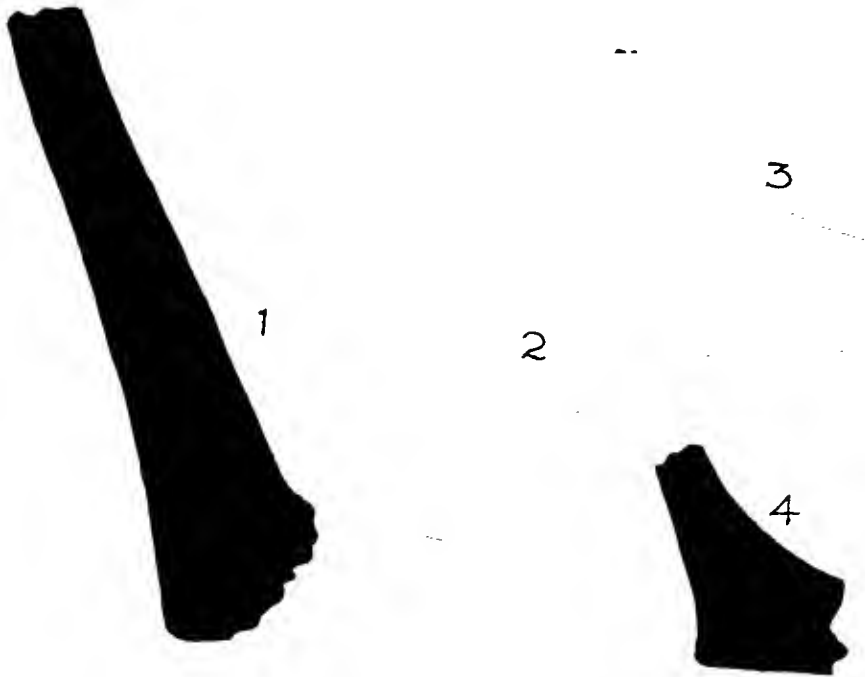


Fig. 18. Sections of Sherds of Red Ware with thick Bases.

A REVIEW OF THE RESULTS OF THE EXCAVATION OF THE PREHISTORIC GROUP OF DWELLINGS.

With the excavation of Dwelling No. v the exploration of the prehistoric settlement at Jarlshof appears to have come to a close, for unless, as is quite probable, more dwellings lie concealed beneath the ruin of "Jarlshof" itself, there do not appear to be any more outside it to the east and south. Accordingly, a general review of the results of the four years' excavation appears now to be justified.

In all, five dwellings have been excavated, either completely or in part. Of these the earliest was probably Dwelling No. ii, the most

easterly of the group. Unfortunately, the building had been much pillaged in the distant past for stones, and only a fragment of the plan could be recovered. It showed two phases in its occupation.

From it there was recovered, protruding from the angle of a slate-box, a sherd of coarse pottery decorated with a zone, bounded with parallel impressed lines, and containing zig-zag, or chevron ornament, in the same technique; the character of the ornamentation being that of Hallstatt pottery of the early Iron Age of Europe. No other pottery similarly decorated has been found at Jarlshof. Slate artifacts, chiefly in the form of spatulate implements, were common on the site, but there was a complete absence of saws or knives of slate, and of scrapers of quartz, objects all found in other dwellings. Bone implements were rare, as also were sherds of pottery. The relative antiquity of this dwelling, as compared with that of its immediate neighbour, was demonstrated by the relation of a stratum of blown sand to the foundation-level of the latter, and the floor-level of the former. This stratum, which lay conformably over the whole site of Dwelling No. ii, had obviously been deposited shortly after the outer wall of Dwelling No. i had been built, as only the foundation course of the latter was beneath its level, while the floor-level of the former was buried, not merely beneath a layer of dark soil, but beneath the sand to a depth of $2\frac{1}{2}$ feet, indicating a considerable lapse of time between the abandonment of the one dwelling and the construction of the other.

Dwelling No. v, the excavation of which is reported above, may be regarded as next in chronological order. It produced, as stated above, knives and saws of slate, scrapers of quartz, and a few implements of slate. Pottery was not abundant. There was evidence of three different periods in its occupation. The first, which was confined to a dwelling with chambers, showed a plan with a small central court, lateral cell-like chambers on either side, and a long transverse chamber at the inner end. The second period brought about the addition of an outer court from which a drain was constructed through a small recess in the south wall. In the third period a wall, lighter in character than the other walls in the building, was erected across the entrance to the secondary court, and carried northward into an area which cannot now be conveniently explored. At this period also the drain was closed and a stair constructed partially across it leading to a passage giving access to Dwelling No. i. Had this drain not been closed, it would have led straight into Chamber L of that dwelling.

The pottery from the interior of Dwelling No. v differs from that found elsewhere. Certain sherds recovered, however, from the outer

court, and presumably referable to its latest occupation, closely resemble in character sherds from Dwelling No. i.

Dwelling No. i, erected probably during the third period of No. v, also showed three phases of its occupation. It consisted of a construction comprising a small central court, lateral chambers, and a transverse chamber at one end, as in Dwelling No. v. In its earlier periods there was connected with this building across the passage of entrance, a circular chamber, possibly part of some earlier construction. On the floor of the passage was a double layer of paving-stones. From the passage an entrance at right angles gave admission to the main part of the dwelling. Presumably after the end of the second of the occupations, this entrance was blocked, and the passage and stair thrown out of use, while a new entrance was opened out at the other end. In the third phase a chamber on the south side was altered and furnished with a door, and possibly remained the only habitable portion of the dwelling.

During this last period the house was occupied by a bronze worker, who cast swords, axes, etc., in clay moulds. To release his castings he broke the moulds and disposed of the fragments where the presence of the sharp-edged pieces would be least inconvenient. He threw them into a small lateral chamber that had been closed; he also threw them over the end wall into the passage, as well as into the chamber beyond, and on to the stair. But in neither chamber, passage, nor stair, did they rest on the actual floor, but in the sand above it, thus supplying a definite chronological horizon.

This dwelling produced saws and knives of slate, scrapers of quartz, socketed chisels of bone, and pottery somewhat analogous in character to sherds found in Dwelling No. v, and referable to a late occupation of that house.

Dwelling No. iii, adjacent but not in communication with No. i, also showed that it had been occupied in three distinct periods. The plan of the earliest of these is closely analogous to that of Dwelling No. i, leaving out of account the odd chamber on the right of the passage of the latter.

The relics found were of the same character as in the other dwellings mentioned, but in respect that fragments of clay moulds for swords, etc., were numerous among them, the earliest of these occupations evidently approximated in date to the latest of No. i. It may even have been slightly anterior, as the pottery found in it, without any steatite in the body, appears to be of earlier date than that recovered from the main structure of the latter.

The second of the occupations showed a distinct change of plan, the old arrangement having been completely abandoned. The dwelling

appeared to have been converted into a workshop, with a large circular hearth in the centre, and a series of cubicle-like cells formed along one are only. An earth-house appears for the first time.

There was a marked change in the character of the relics. Socketed chisels of bone, saws and knives of slate, and scrapers of quartz are all conspicuously absent.

Numerous fragments of moulds show, however, that the culture is still that of the late Bronze Age.

A complete change has taken place in the style of the pottery. Black polished ware with a hollow beneath the rim makes its appearance, and also a ware with straight sides and a flange projecting inwards, closely analogous to late Bronze Age pottery from All Canning's Cross Farm, Wiltshire, and from Scarborough.

In the third period the plan closely followed that of the second, with a large central hearth, and cubicle-like chambers on one are only. It was also provided with an earth-house.

There is an absence of the rude stone implements so numerous in the lower levels, and an increase in the number of hammer-stones and pounders. Fragments of moulds for casting bronze weapons, etc., are totally absent.

The pottery bears, however, a fairly close resemblance to that found at the level of the immediately preceding occupation of the site, but seems to show signs of decadence in form, though it is obviously of the same style.

Dwelling No. iv, between No. iii and the sea, was only partially excavated as the structural remains exposed bore a close analogy to those removed from the centre of Dwelling No. iii at the two higher levels in order to reveal the earlier plan, and on that account it was considered desirable to leave them undisturbed. No portion of a mould was found in this dwelling, though the pottery, with an inturned rim or flange, was clearly akin to that found in the second occupation of Dwelling No. iii. It seems probable, therefore, that the inhabitation of Dwelling No. iv at the level exposed, occurred subsequent to the second phase of occupation of Dwelling No. iii and previous to the third occupation of that dwelling.

Dwellings No. iii and No. iv were obviously constructed to some extent on the ruins of a still earlier period, remains of which formed a connecting link between the two.

The fact, revealed in the above summary, that there can have been little contemporary occupation of the various prehistoric sites in this settlement, requires an explanation.

From the plentiful animal remains, and the presence of numerous

querns, coupled with the general absence of fish-bones, it seems probable that the occupants were pastoral in their habits, rather than seafaring. The site is one which has been much affected until recent times by moving sand, blown in from the arid surface of the isthmus behind it. At least one deep stratum as well as various deposits of blown sand were encountered in the course of the excavation. It is suggested, therefore, that the sand from time to time overwhelmed the adjacent pastures, and patches of corn land, and invaded the dwellings to such an extent as to render them uninhabitable. In the course of time, as, from some unascertained cause, the sand-storms grew less violent, and vegetation reasserted itself, forming humus on the former sites, a new generation would return to the ruins, reconditioning them to their needs, and taking advantage of the fresh pastures. Over several hundred years history repeated itself, and so we have at Jarlshof a series of distinct occupations on a small area, ranging from a time considerably before the advent of bronze to Shetland, to a period when iron had been completely established as the metal for weapons and implements, and not long before the date of the construction of the adjacent broch.

Major A. A. Gordon, C.B.E., etc., for several weeks rendered me assistance, which I here gratefully acknowledge, as I do also the constant help of the officials of the Office of Works, Mr J. B. Mackay, the draughtsman, and Mr Laidler, the foreman. The excellent staff of local labourers brought the same zeal and intelligence as formerly to the execution of their task.

V.

A FORT AT SKITTEN, WICK, CAITHNESS, WITH NOTES ON
FLINT IMPLEMENTS FROM THE SAME COUNTY. By
MRS L. DUFF-DUNBAR, F.S.A.Scot.

The hill-fort or earth-walled ring at Skitten, Kilminster, in the parish of Wick, Caithness, is described in the Ancient Monuments Commission's *Inventory of Caithness Monuments*, p. 165. It is situated on slightly raised

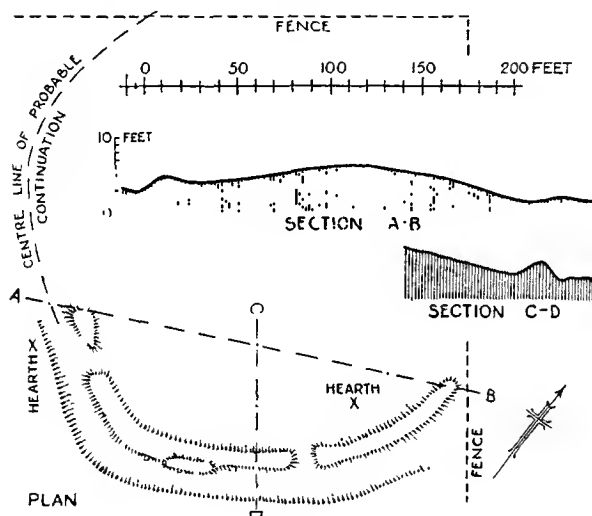


Fig. 1. Fort at Skitten, Caithness: Plan.

ground on the edge of a moor about 2 miles from the sea, and takes the form of an oval fortified enclosure about 230 feet in greatest diameter from north-west to south-east, surrounded by a ditch, still distinct on the uncultivated segment, and by a low rampart of yellow clay mixed with small stones which is now almost effaced by the plough except on the uncultivated part (fig. 1).

When the last Ordnance Survey was made it was under heather except for a grassy space in the centre and was not noticeable enough to be indicated on the survey sheet. Before the ground was cultivated there was a ring of fine green turf round part of the enclosure and a portion of this still exists at the south-west side. No large stones were

turned up when the land was taken in and there was no trace of a cairn. At the south-east side there is a segment measuring roughly about 170 feet by 55 feet still under grass and short heather. The earth-wall of this segment varies in width from about 15 feet 8 inches across one point to about 23 feet 4 inches at another. A break through the circumvallation towards the south-east has probably been the entrance. It measures about 8 feet 3 inches across. The ditch is roughly 3 feet below the top of the rampart. The arable soil within the latter is from 6 inches to 12 inches in depth. The sub-soil is a yellow clay and the rock is said to lie 10 feet to 12 feet below the surface.

There are at least three fire sites, two within the rampart and one to the south side 10 feet away from it. This outer hearth is intact and will I hope remain so. One of the inner hearths now disturbed by the plough lies 50 yards north-west of the rampart, and the third and smallest, also disturbed by deeper ploughing in 1933, is at the south-east corner of the enclosure, 28 feet 6 inches from the enclosing ring. A trial opening at the largest hearth, before it was so much disturbed by agricultural operations, showed first 5 inches of soil, then a thin orange-coloured stratum with a layer of small flat, thin, laid clay-stones, fire-marked, and some with a sooty substance on them underneath. The latter were bedded in a stratum of from 3 inches to 4 inches of fine white siliceous clay with one or two small bits of what appears to be charcoal embedded in it.

Sir John Flett, F.R.S., who has kindly examined the clay, says that it is not marly or calcareous, but contains many subangular grains of quartz, fine scaley particles of white clay, weathered mica, and no vegetable matter or diatoms. He says that there is no such deposit of clay known in Caithness, and that he is not free from a suspicion that it may be the ashes of fires, but "if so, the peat was very sandy and dirty, and the clay is exceptionally white in colour if derived from such a source." When burned in a hot fire it remains pure white.

In the Knowe of Unstan, Orkney, the floor of the chamber was covered, except in one small space, with white clay (*Proceedings*, vol. xix. p. 34), and I am informed that similar material came from the neolithic chambered cairn Taiverso Tuick, at Trumland, in Orkney. In 1931 the Rev. P. Clayton dug down to a prehistoric layer under a late tower built of dry walling, also in Orkney, and there found a white layer, which it has been suggested had been a hearth.

In 1931, while marking the smallest fire-site (since ploughed up) so that it might not be entirely lost trace of in the processes of agriculture, I had a top spit carefully removed and under the first spadeful, a pasture

sod, was a piece of a Bronze Age cinerary urn measuring about $4\frac{1}{2}$ inches by $4\frac{1}{4}$ inches lying on the fire-marked clay surface. The colour of the pottery is pale reddish-yellow and it shows the usual mixture of broken stone. It is about $\frac{1}{2}$ inch thick. The rim is short but overhanging and there are two bands of decoration, one above and one below the lip bulge, consisting of impressed vertical lines perpendicular to the rim. Three fragments of flint were with the piece of urn and one tiny bit of burnt bone.

No interments have been found, nor any entire vessel. Besides the piece of urn just described I picked up, in 1929, a fragment of pottery of rough clay mixed with white particles, apparently of shell, bright red outside and blackish at the core, resembling pieces found on a small, seemingly Bronze Age site at Findhorn (*Proceedings*, vol. lxiii. p. 353). Other pieces, said to be also small, were got inside the Skitten ring about 1905, but the finder, Mr John Nicolson, Nybster, gave them to Sir Francis Barry of Keiss, and they cannot now be traced.

I have not found any bones except one or two burnt scraps, nor any of the limpet and periwinkle shells that abound in the seaside kitchen-middens.

When defining the area of the hearth outside the ring, so that it might not be lost or dug over, I had cuttings made spoke-wise towards it, and while this was being done we came on a place 4 feet 8 inches from the outer edge of the white clay where at 1 foot 8 inches from the surface there was a further 9 to 11 inches of loose black and grey clayey soil containing a few small bits of red and white stone. Following this, outwards from the hearth, we found a small pit 2 feet 8 inches deep. It was paved with two flat flag-stones, measuring respectively 1 foot 3 inches by 1 foot 11 inches and 1 foot 5 inches by 1 foot 4 inches laid lengthwise with one or two smaller stones. The flags were carefully raised and then replaced and the pit was filled in. The expert ditcher and drainer who was doing the spade work said that the earth under the paving was undisturbed grey sand. There was no layer of white clay on the flooring, nor did the riddle reveal any shards of pottery or any bones, burnt or unburnt. The loose blackish earth has been analysed by Dr J. F. Tocher, County Analyst, Aberdeen, and he reports that it is composed mainly of silica and alumina without any evidence whatever of the action of fire. The pit was not puddled with clay like an, apparent, food-pit at a Bronze Age village of hut-circles in the Anld Yeoeh, Auchterless, Aberdeenshire (*Proceedings*, vol. ix. p. 157).

A trial excavation of a small bit of the ditch yielded first heather and turf, no peat, then looser greyish soil which passed to clay at a depth of 4 inches. Nothing was found by the riddle.

I have from Skitten a piece of granulated quartz veined with red chalcedony and three small bits of rock crystal. Quartz flakes occur in the circle.

Mr M'Ghee, the tenant of the Skitten site, has told me that when the ground was first ploughed he found a number of round or oval stones of a grey granite-like rock, measuring 6 inches to 8 inches in circumference. These were thrown away, but others have been found from time to time since observation of the site was begun. Such rounded pebbles of white biotite granite occur on the sea beach. They may have been hammer-stones and there is on one or two a suggestion of such use.

One ball of sandy rock about 8 inches in circumference has been used as a hammer. There are also a roughly rounded disc of sandy stone about 5 inches in diameter and over 1 inch in thickness, and one or two unworked pieces of flint, not flaked but chipped and battered, resembling flints in the British Museum and elsewhere, noted as hammer-stones. A piece of greyish flint measuring $8\frac{1}{2}$ inches by $2\frac{3}{4}$ inches, which shows on its upper surface incipient cones, might just possibly have been used as an anvil-stone.

Another artifact found in the site is a section of a claystone polisher, $1\frac{7}{10}$ inch by $\frac{9}{10}$ inch by $\frac{4}{10}$ inch, semi-cylindrical above and flat below. No rubbing-stones or pounding-stones of the well-known broch types have occurred, and, although whorls are fairly common in the district, none has been found on the site.

Flint working was carried on extensively within the enclosure. Unfortunately the site was not under observation when the ground was taken in from the moor about forty years ago, but all over the now tilled land, and out of soil from trial excavations examined by the riddle there is an apparently inexhaustible supply of flints, worked and unworked. Many of the broken flints are calcined. There are numerous broken and unbroken water-rolled pebbles of no great size, but none of the large, fresh, chalk-coated nodules that occur in the south and east of England have been got in the ring. One black flint nodule has occurred.

Small round scrapers are the most usual artifacts. They are mostly of poor workmanship, though one or two thumb-scrapers are carefully chipped. The round scrapers seem to have been made by striking a cap-like slice off the rounded end of a pebble and then chipping the edge more or less, usually less, at one end. The large number of these caps suggests that some may have been used as scrapers without further dressing.

Cores are small and not as numerous as one would expect.

There are side-scrapers, nosed (or tailed) scrapers, knives or side-scrapers, ridged flakes, flakes with parallel edges and square ends, and very

numerous flakes of no special form. So far no notched flints have been found here. Flakes with and without notches have occurred at Mid-Freswick and Kinlochty, and there is an *encoche*, in the National Museum, from the former place, found by Mr Simon Bremner, of Mid-Freswick.

Only two arrow-heads have been found so far as I know on the site. One is leaf-shaped of white cherty flint. The other is a beautiful thing, very thin and diamond-shaped, of a greyish-yellow colour, with beautiful long flaking. It is said that a barbed and tanged arrow-head of yellow

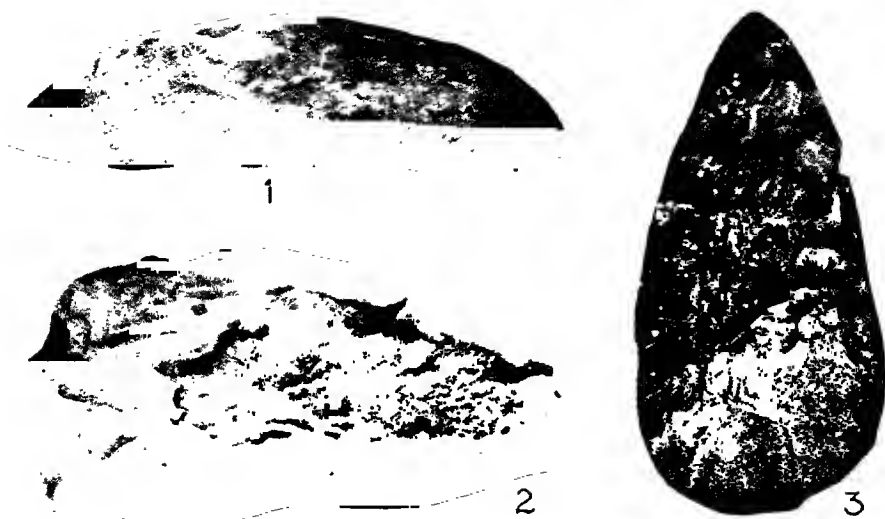


Fig. 2. Flint Knife, Axe, and Spear-head from Caithness. (1.)

flint was picked up on the site, about thirty-five years ago, but, if so, all trace of it is lost.

Some of the Skitten flints show patches of the surface polish called "gloss."

Worked flints and pieces of flint have been got on the small farms adjoining the hill-fort, and I have a beautiful light-grey curved knife, measuring $3\frac{3}{16}$ inches by $1\frac{1}{16}$ inch from one of them (fig. 2, No. 1).

On the farm of Kinlochty above Hempriggs Loch, about 7 miles away, there is another site of flint working. At Kinlochty the Misses Bremner have found at one spot on the arable land a large number of smooth, oval flint beach pebbles, all except five being black in colour, and varying in size from under 1 inch up to $1\frac{1}{2}$ inch and even more, but mainly

of a fairly even size between. Only four of them had been broken. Two like pebbles with their surfaces polished have been got just across the road from the Skitten hill-fort on a croft that also yields many flints. Sling-stones of much the same size and shape, made of clay, are in the Glastonbury Lake-Dwelling collection. Is it not probable that these pebbles are sling-stones? It seems difficult to account otherwise for the Kinloch collection. Since these flints were found I have seen Dr Curwen's *Prehistoric Sussex* (1930), and at page 45 he mentions the finding in the Caburn Camp of several hundred selected flint beach pebbles which he supposes were collected as sling-stones. "The flint sling-bullets found at the Caburn," he was kind enough to write under date 11th February 1932, "are a definite feature of the Early Iron Age, having been found at the Trundle and at Cissbury in equally large quantities, but we have not found them with remains of the neolithic period in this country." The Caburn remains extend, Dr Curwen says, from neolithic to Roman times. One baked-clay bullet such as Caesar assigns to the Gauls was found there.

Careful observation over years at this Skitten site has failed to detect so far other than the artifacts described, but should a deeper or more extended examination of the enclosure be possible, other types may yet be found.

That a flint worker's site, while abounding in material, mostly decidedly poor, should not be productive of fine finished implements is perhaps to be expected, unless in the case of the precipitate flight of the worker. The neighbourhood of a settlement such as at Foulden Moorpark, described in the *Proceedings*, vol. lviii, p. 112, is a much more hopeful situation for such finds. There are many hut-circles in Sutherlandshire and some in the less exposed southern parts of Caithness, and it seems possible that prior to the Broch period the north-eastern and more exposed districts may have been occupied mainly in the summer for hunting and grazing, and that the Skitten site may have been an enclosed summer camp.

There is not as has been said, nor has there been a stone wall round this defensive construction. The only stones found in the site are more or less worn and rolled "land-stones."

Along the south coast of the Moray Firth throughout the counties of Aberdeen, Banff and Moray worked flints abound, but when one crosses some 60 miles of sea to the northern side of the firth to beyond the Ord of Caithness the conditions alter. It must be borne in mind that much possibly once inhabited land in the pleasant sheltered straths of the burns is unexplored and untilled and permanently under natural turf.

Caithness from the border hills is a wide expanse of moor and, except for the absence of birch, scrub and pine, is the land as Neolithic and Bronze Age man viewed it—a fascinating thought. There is a fertile and highly cultivated belt along the coast and inland up the Wick and Thurso rivers to Halkirk. In this cultivated part worked flints occur, but less commonly than on the other side of the firth.

No deposit of flint occurs like the Aberdeenshire flint belt which runs for about 10 miles diagonally across central Buchan from Whitestone Hill to Buchan Ness with outliers near Turriff and Fyvie, affording an inexhaustible store, but in Caithness we have the advantage of knowing that every flint found on the land has been carried by man at some date or other.

The only native Caithness flints are beach pebbles brought up by the sea or the ice from the floor of the Moray Firth. Dark and light grey, blackish and yellowish rolled flint pebbles occur in the shingle of the sea beach, and these seem to have been diligently collected and used. So far as I have examined the 5-foot raised beach I have not found on it any flints, a circumstance which suggests prehistoric gleanings. As regards the present beach, the supply is renewed by the tides. These small tidal flints are rarely coated with a soft chalk cortex, but I have got coated nodules of a larger size. One of these, dug up in another part of the district, looks as if it had been recently separated from the matrix of the Sussex chalk. It weighs 1 lb. 11 oz. On the farm of East Harland, not far off, a fine black triangular scraper, $2\frac{4}{10}$ inches by $1\frac{7}{10}$ inch, was found in 1933. Though black flint occurs it does not seem to have been a popular material. A yellow flint is found, not apparently derived from beach pebbles, and an interesting fact is the fairly frequent occurrence among the worked flints of a fine red. This colour seems to be characteristic of Aberdeenshire, though of course it is found in other places, and its marked occurrence in Caithness may perhaps be safely put down to commerce, direct or indirect, between these counties in prehistoric times. I have looked for red flint among the artifacts in the British Museum, and so far, I write subject to correction, I have not noted any arrow-heads of that colour from the British Isles that are not of northern Scottish provenance, except, I think, three from Antrim in the Sturge Collection. These may be exceptional, for Mr Deane, Curator of the Belfast Museum, writes that, though in Antrim red flints do occur in pockets between the chalk and the basalt out-poured in Eocene times, he knows of no artifacts made from them. They are, he adds, porous and would be most unsuitable material for striking. On the farm of Kinloch, where by far the larger number of flints found are rolled beach pebbles, the one arrow-head so

far found is part of a thin reddish leaf-shaped point, finely flaked. One small spatulate-shaped flake or scraper from a farm adjacent to that on which the Skitten enclosure is situated is of red-brown flint, spotted with cream colour, and might have come off the same core as a scraper from Glen Urquhart in the Sturge Collection. Mr Bathgate of Gersa has noted the occurrence of red flint at Gersa.

Till last year no flint axe had been reported from Caithness, nor any artifact larger than the fine yellow flint spear-head measuring $2\frac{1}{2}$ inches by $1\frac{7}{10}$ inch found in the parish of Bower many years ago and preserved in Stemster House (fig. 2, No. 3). But in the summer of 1933 Major Sutherland, M.C., of Wick, secured from shingle got from the north side of Wick Harbour a small grey-blue flint axe formed from a natural flake by rather rough chipping almost all on one face: it is probably unfinished (fig. 2, No. 2). It measures about $2\frac{4}{16}$ inches by $1\frac{3}{16}$ inch and is about $\frac{3}{5}$ inch in greatest thickness. A good deal of the cortex remains. In the *Geology of Caithness*, 1914, p. 157, it is stated that the asserted presence of marl, if verified, would point to a loch along that part of the river course "at the harbour mouth now submerged . . . and from certain data it seems clear that the Wick River at some time since the Glacial Epoch has eroded its channel to a depth at least 60 feet below present low water" and "the land has undergone depression in post-glacial times."

Caithness has yielded fine axes and hammers of other kinds of stone, only two of which seem to have been associated with burials—the beautiful hammer of polished grey granite from the Ormiegill short, horned, chambered cairn, and the axe of micaceous sandstone found in 1926 in a round chambered cairn in the parish of Reay.

The usual type of flint arrow-head found in Caithness is the leaf or the diamond shape, the form found in the megalithic cairns. The lop-sided arrow-head of dark flint found in the Ormiegill chambered cairn, though common in Ulster and occurring in Aberdeenshire and other parts of Scotland, is, so far, unique in Caithness. Out of fifty-five arrow-heads from Caithness in the National Museum, there are only nine with barbs and stems. Not one of the nine is of Mr Reginald Smith's Beaker type with the ends of barb and stem in one line forming a triangle, although what seem to be the only two existing Caithness Bronze Age pottery vessels are two beakers of Abercromby's "C" type. One of these was found in a short cist at Glengolly near Thurso, accompanied, the finder states, by a smaller earthenware pot, in existence seven years ago but now lost. The beaker (fig. 3) is preserved in Thurso Museum. The other beaker was found in a short cist at Acharole in 1904. It is now in the National Museum, and the find is described and figured in the

Proceedings, vol. xxxix. p. 448. Fragments of urns have been discovered from time to time.

Mr Nicolson, Nybster, has, I understand, found only one barbed or stemmed arrow-head: it is of yellow flint and has serrated edges. He picked it up in the parish of Mey, near Dunnet Head. There is in Thurso Museum a barbed and tanged arrow-head with the stem rather longer than the barbs.

In the *Proceedings*, vol. lvii. p. 18, there is noted the gift by Mr Murray (Stemster, Bower) of three barbed and forty-two leaf-shaped arrow-heads of flint and chert from the southerly face of Stemster and Sordale Hill, where neolithic cairns are noted in the *Ancient Monuments Inventory*. Up till now this has been far the most productive site in the county. Leaf-shaped arrow-heads have been found on the sunny side of Tannach Hill and above the Loch of Hempriggs, and the late Mr Scott, the artist, collected a number round the site of M'Colé's Castle, a chambered cairn near the Loch of Yarrows. Mr Bremner, Mid-Freswick, found two barbed and tanged arrow-heads about twenty



Fig. 3. Beaker from Glengolly, Caithness.

years ago, and leaf-shaped arrows as well on a ridge with a southerly aspect above the Burn of Freswick. The late Sir F. Barry, while questing for brochs, found I think six arrow-heads, one stemmed, along with charcoal, ashes and fragments of thin black pottery in a cairn near Ackergill Tower: but no record of the excavation seems to have been kept. All these sites are dry and sunny. Prehistoric folk had no more desire to live in bogs than we have.

None of the four-horned long cairns recorded in the *Ancient Monuments Inventory* as having been examined has yielded any implement. Three were excavated by Dr Joseph Anderson in 1865-6, two at Yarrows (Nos. 543 and 544 Report), and one at Causter (563), and a probable fourth at Heathercrow in Bower, by Sir Francis Barry: of the last no record seems to have been made. About a dozen chips of flint, mere

fragments, were found in the larger long horned cairn at Yarrows (543). The surface of the floor was a compacted mass of earthy clay, ashes and charcoal, about 5 inches thick, containing minute fragments of calcined human bone. Two fragments of pottery, well made, hard baked, and of thin black paste unornamented, were found. The smaller long horned cairn at Yarrows was similar, with burnt fragments of human bone in the floor and unburnt on it. There was in the outer compartment a cist with fragments of an urn ornamented with parallel twisted cord impressions and small discoidal lignite beads. A secondary interment?

In Camster long horned cairn the same conditions were found, and splintered bones of horse, ox, deer and swine, but no fragments of pottery, nor chips, nor implements of flint were found.

Large quantities of flint chips and flakes have been found in some of the short horned and chambered cairns as also numerous pottery fragments which seemed to be of thin, hard-baked round-bottomed vessels, mostly unornamented. The three leaf arrow-heads from the round horned chambered Cairn of Get and the triangular or lopsided arrow-head from Ormiegill cairn are the only instances known to me of the occurrence in Caithness of flint arrow-heads associated with burials, unless the finds at Ackergill were such. In the Cairn of Get there were at least four unburnt skeletons, and one skull was of great size and weight and showed a cephalic index of 76. In Cairn Hannach a round chambered cairn, not horned, great quantities of pottery-fragments of seven varieties were discovered, and flint chips, but no flint implements. In the round unhorned cairn at Camster which the *Inventory* calls "the finest example of an excavated chambered cairn in the county, if not in Scotland," a small, finely formed flint knife was found by Dr Anderson.

MONDAY, 14th January 1935.

SIR GEORGE MACDONALD, K.C.B., LL.D., F.B.A.,
President, in the Chair.

A Ballot having been taken, the following were elected Fellows:—

JAY LESSELLS, D.A.Edin., L.I.F.A.Lond., Surma, West Kilbride, Ayrshire.
DANIEL MCBRIDE, B.L., Sheriff Clerk of Dumbartonshire, County Buildings,
Dumbarton.
NEIL MACVICAR, W.S., 9 Belgrave Crescent, Edinburgh, 4.
GEORGE WILSON MITCHELL, Kirktown Mills, Drumblade, Huntly, Aberdeenshire.
D. TALBOT RICE, M.A., B.Sc., Professor of Fine Art, Edinburgh University,
2 Moray Place, Edinburgh, 3.
ROBERT NEWLANDS WARDROP, B.Com., 15 Bridge Street, Musselburgh.

The following Donations to the Museum were intimated, and thanks voted to the Donors:—

(1) Bequeathed by Captain HARRY A. ARMITAGE, F.S.A.Scot.

Two Special Constables' Batons.

Old Horse-shoe, found 2 feet 6 inches below the surface of the ground on the site of the Cistercian monastery at North Berwick.

Old Fishing Reel of Iron.

Bread-spade of Iron.

Old Dutch Tobacco-box of Brass, showing the Crucifixion engraved on it.

Loom-weight of burnt Clay, of spherical form and centrally perforated, measuring $2\frac{13}{16}$ inches in diameter, no locality.

Axe of green Jade with its wooden handle, from New Zealand.

Carved Stone Ball with four projecting discs, measuring $2\frac{11}{16}$ inches in diameter, no locality.

Socket Stone, no locality.

Bead of amber-coloured Glass inlaid with yellow paste, measuring $2\frac{11}{16}$ inches in diameter, no locality.

Highland Flint-lock Pistol of Steel with scroll butt, wanting the pricker: it is ornamented with engraved foliaceous designs and a trophy of arms, and bears the name Meyer and Quiller, Edinburgh, a firm of outfitters in Edinburgh in the first quarter of the nineteenth century. The pistol was probably made in Birmingham.

Curling Stone, made from a roughly dressed boulder, and measuring $12\frac{5}{8}$ inches by $11\frac{1}{2}$ inches by $7\frac{1}{2}$ inches, with an iron handle, and the initials I. G. carved on the top.

Crosraguel Penny and a Portuguese Gold Coin.

Twenty old Golf Clubs.

(2) By Mrs ELIZABETH SUTHERLAND, 15 Ryehill Place, Leith.

Sampler of Linen, with a crown, the initials C. E. L., and date 1829 within a border in the centre, all sewn in red thread; this is surrounded by twelve small panels showing varieties of stitching, from West Lothian.

(3) By the FORESTRY COMMISSIONERS.

Food-vessel of brown Clay, restored, measuring $4\frac{1}{2}$ inches in height and $5\frac{3}{8}$ inches in diameter at the mouth, found in a short cist at the nurseries of the Forestry Commission at Tulliallan, Fife. (See subsequent communication by James S. Richardson, F.S.A.Scot.)

(4) By The Honourable LORD FORBES.

Pottery and other Relics found in the stone circle at Old Keig, Aberdeenshire, excavated by Prof. V. Gordon Childe, F.S.A.Scot. (See *Proceedings*, vol. lxvii. p. 37, and vol. lxviii. p. 372.)

The following Purchases for the Museum were intimated:—

Old Flagon of dark olive-coloured Glass with a globular body and long neck, bearing a bottle-stamp DM Customs on the shoulder, from Leith.

Flat Ring Brooch of Bronze, measuring $1\frac{1}{16}$ inch in diameter, made from an old coin or counter by cutting out the central part and leaving the inscription round the edge. The pin with its turned-over hinge survives. Found on the Glenluce Sands.

Luckenbooth Brooch of Silver of the crowned type, with a fixed hinge pin, measuring $3\frac{5}{8}$ inches in height. On the back are the maker's mark C J (Charles Jamieson, Inverness) struck three times, and the initials I M K.

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By HIS MAJESTY'S GOVERNMENT.

Acts of the Privy Council of England, 1625-1626. London, 1934.

Calendar of State Papers. Domestic Series, 1st July to 30th September 1683. London, 1934.

120 PROCEEDINGS OF THE SOCIETY. JANUARY 14. 1935.

(2) By Miss J. C. C. MACDONALD of Ballintuim, F.S.A.Scot.
National Art-Collections Fund. Thirtieth Annual Report. 1933.
London. 1934.

(3) By LA FONDATION SINGER-POLIGNAC, Place Marcellin-Berthelot,
Paris. V^e.

Les Peintures Rupestres Schématiques de la Péninsule Ibérique. By
L'Abbé Henri Breuil. III. Sierra Morena. De Lagny. 1933.

(4) By THE SECRETARY. The Manx Museum.
The Journal of the Manx Museum. Vol. ii., No. 41. December 1934.

(5) By Rev. ARCHIBALD MACKENZIE. B.D., F.S.A.Scot., the Author.
John Welch and his Garden. Ayr. 1934.

(6) By T. H. HOLWERDA. Leiden. Holland. the Author.
Ein Hallstattzeitliches Fürstengrab bei Oss in Holland. Breslau. 1934.

(7) By Sir GEORGE MACDONALD. K.C.B., LL.D., etc., President.
Der Glauberg. By Dr Heinrich Richter. Darmstadt. 1934.

(8) By ALEXANDER KEILLER. F.G.S., F.S.A.Scot., F.S.A., the
Author.

Megalithic Monuments of North-East Scotland. Read to the British
Association at Aberdeen. 7th September 1934.

(9) By THE LOCAL GENERAL COMMITTEE. Town House. Aberdeen.
British Association. Aberdeen Meeting. 1934.
A Scientific Survey of Aberdeen and District. Aberdeen. 1934.

(10) By ROBERT DINWIDDIE. High Street, Dumfries.
The Gallovidian Annual. 1934. Dumfries. 1934.

(11) By HENRY M. PATON. Edinburgh. the Author.
David Hay Fleming. Historian and Antiquary. Edinburgh. 1934.

(12) By The Very Rev. JOHN ROCHE ARDILL. LL.D., Dean of the
Cathedral Church of St Mary the Virgin, Elphin. the Author.
St Patrick: Where was he born? Dublin. 1934.

(13) By OLIVER DAVIES, M.A., and ESTYN EVANS, M.A., F.S.A., the
Authors.

Excavations at Goward, near Hilltown, Co. Down. Reprint from
Proceedings of the Belfast Natural History and Philosophical Society, 1932-
1933. Belfast. 1934.

The following Purchases for the Library were intimated:—

Die Bauart der Einzelgräber. By Albert Egges van Giffen. 1 Teil: Textband. 2 Teil: Tafelband. Leipzig, 1930.

Jacobites of Aberdeenshire and Banffshire in the Rising of 1715. By Alistair and Henrietta Tayler. Edinburgh, 1934.

The Greatness and Decline of the Celts. By the late Henri Hubert. London, 1934.

The following Communications were read:—

I.

ROCK SCULPTURINGS ON TRAPRAIN LAW, EAST LOTHIAN.

By ARTHUR J. H. EDWARDS, F.S.A.Scot., ASSISTANT KEEPER
OF THE NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND.

Traprain Law, so well known by the important archaeological discoveries made there in recent years, has provided yet another notable find. Where the north-east shoulder of the hill falls sharply away large



Fig. 1. Rock Sculptures on Traprain Law: view from east.

outcrops of rock (a phonolite) can be seen protruding through the turf. For a considerable period great quantities of stone have been removed from this part for supplying material for road metal. In October 1931, when preparations were being made for taking in a new area for quarrying, which entailed the removal of some 2 feet of superimposed earth and turf, there was laid bare a portion of the rock-surface almost entirely covered with sculpturings of an unusual character (fig. 1). The discovery of the first part (Area A), which measured about 6 feet square, was soon followed by the exposure of two similarly carved but smaller portions (B and C), while a fourth (D), the smallest of all with a single design only, was found some weeks later about 15 yards west of the first exposed area and just below the north-east corner of the rampart of the fort on the top of the hill. By good fortune our late Fellow Major W. A. Baird happened to be in the vicinity at the time when the discovery was made, and on his attention being drawn to what Mr A. G. Robertson, the quarry superintendent, recognised as something unusual he advised that the Museum authorities should be communicated with. This was done and I visited the site. Photographs were taken and rubbings made, but owing to technical difficulties, high winds and bad weather, these were not so satisfactory as desired. The work of the quarry had to go on, however, and finally, thanks to His Majesty's Office of Works, plaster casts were made under the direction of Mr James S. Richardson, H.M. Inspector of Ancient Monuments for Scotland. These, after being transferred to the Museum, were treated in a manner so that all marks on the surface, both natural and artificial, should show clearly, and it was from these prepared casts that the photographs illustrating this paper were made. The relative position of the inscribed rocks is shown in fig. 2. For purposes of facilitating description the largest of these (Area A) has been photographed with a series of white tapes so adjusted as to divide its surface into nine different sections, each of which will be described separately so far as it is possible to do so, but in the main the illustrations will have to speak for themselves.

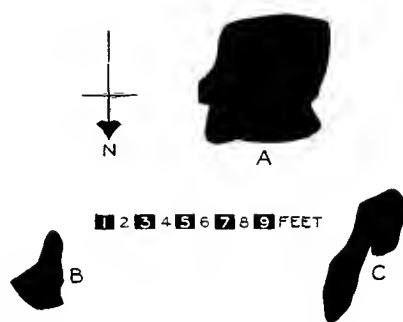


Fig. 2. Rock Sculptures at Traprain: relative positions.

AREA A.

Area A (fig. 3) measures 6 feet 4 inches from north to south and 6 feet 6 inches from east to west. The surface is irregular, as there are



Fig. 3. View of Area A divided into sections.

hollows in the centre and at the north or lower end, a stepped portion at the north-east corner, and numerous channels at different places. In

spite of these natural hindrances the surface, though much weathered, had so many smooth places that the greater part is covered with incised designs.

Section 1 (fig. 4).—Here there are only a few incised lines, but the chief point of interest is the stepped cross of fourteenth-century date. It is thus apparent that the sculpturings, or part of them, were exposed at that time, and it may be that they, though of pagan origin, were still being resorted to by the inhabitants of the district to carry out rites

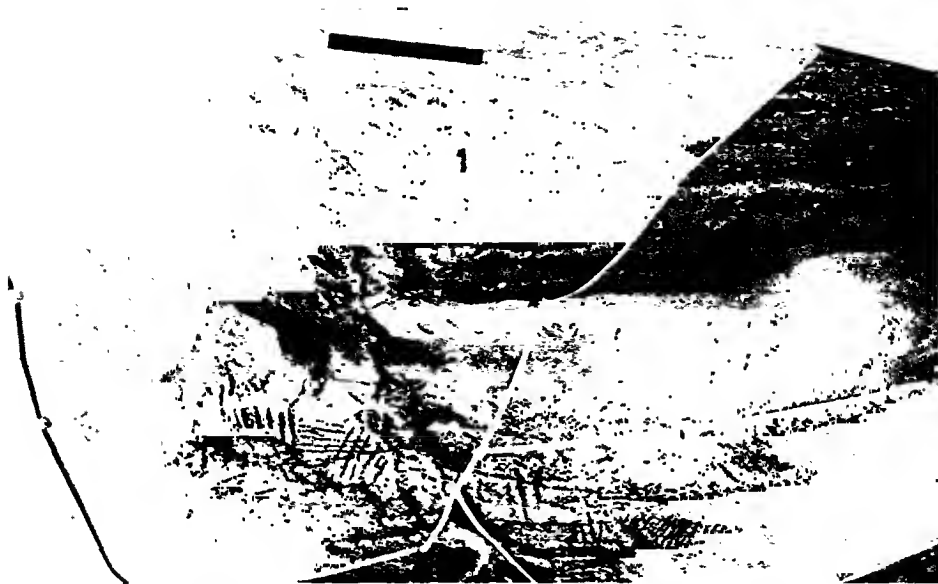


Fig. 4. Area A, section 1, showing Calvary Cross.

which had come down from prehistoric times, and that for the purpose of exorcism the local clergy had carved the Christian emblem.

Section 2 (fig. 5).—There are no markings on this portion, but one side of a natural hollow in the rock has been worn smooth as if metal blades had been sharpened on it.

Section 3 (fig. 5).—Groups of parallel lines, grid and ladder-like designs, cover the greater part of the surface. Near the right-hand bottom corner is a small cup within three incised rings, the diameter of the outermost, which is incomplete, being $4\frac{1}{2}$ inches. From the centre of the cup two diverging lines run to the left and continue outside the rings until they ultimately merge into parallel lines. Another line, deeply incised, crosses these at right angles, and from the lower side a number droop from the rings.

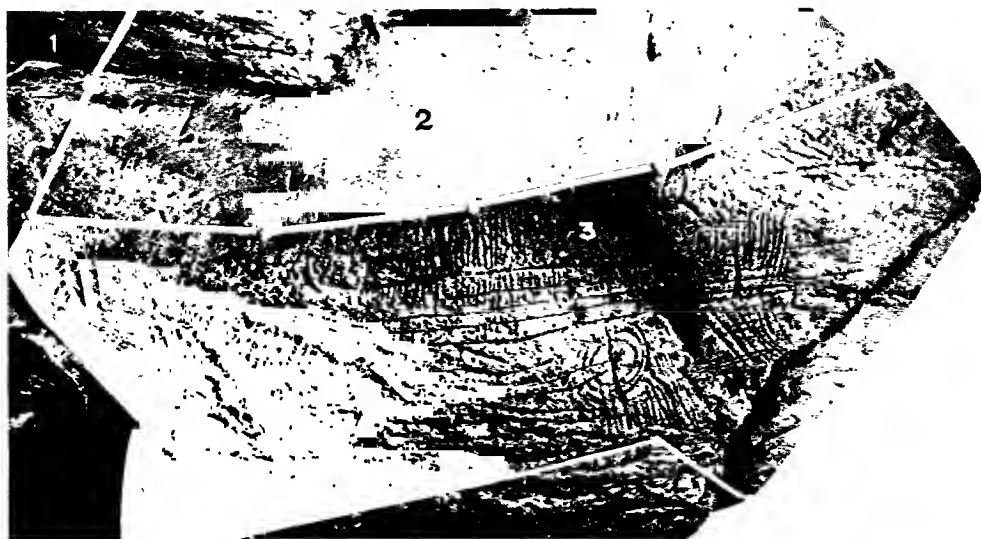


Fig. 5. Area A, sections 2 and 3.



Fig. 6. Area A, section 4.

Section 4 (fig. 6).—The surface is much weathered and portions of the skin have broken away. In the centre is a rudely formed grid. Above the grid there are other roughly parallel incised lines, but the continuity of many of them has been interrupted by disintegration

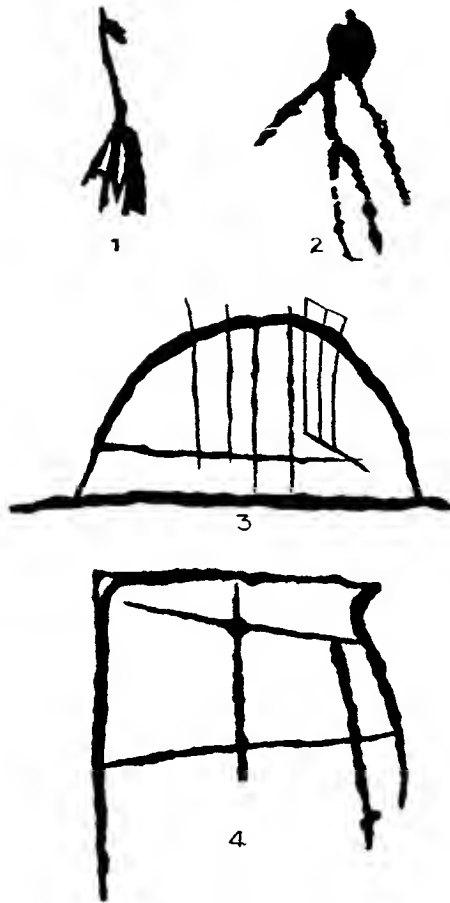


Fig. 7. Nos. 1 and 2, Conventionalised figures of human beings. Nos. 3 and 4, Signs resembling so-called tectiform symbols. ($\frac{1}{2}$)

of the rock. Near the right-hand corner is a small design 2 inches in length, marked by a white cross which may represent a conventionalised human figure (fig. 7, No. 1).

Section 5 (fig. 8). - At the extreme right is a natural cavity in the centre of the rock practically covered with incised lines running at various angles. More striking, however, is the area to the left, isolated on one

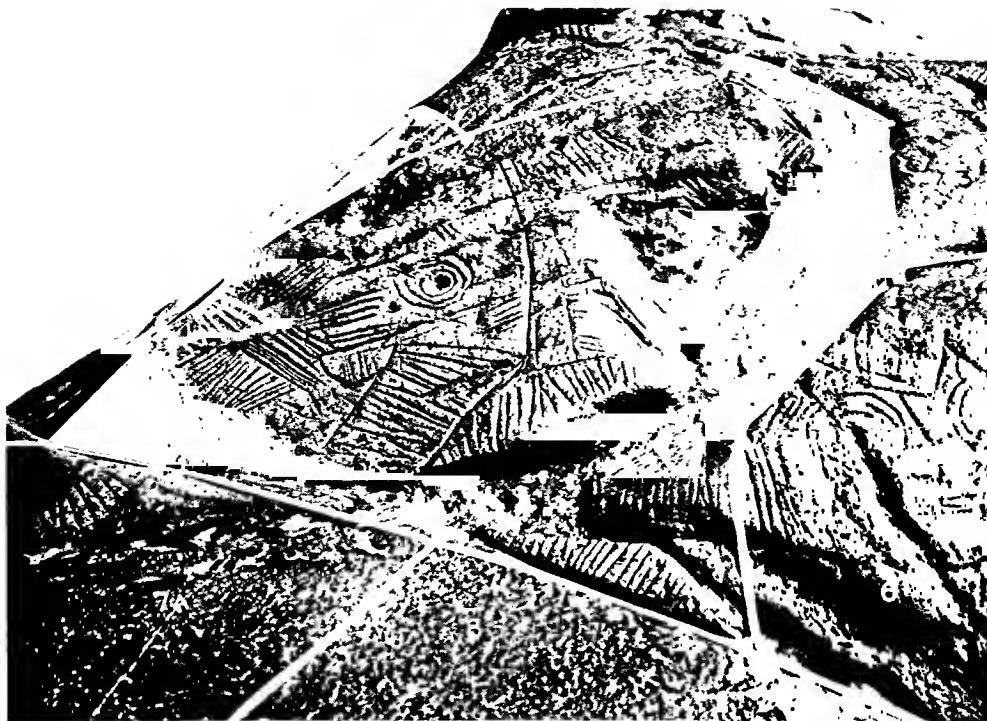


Fig. 8. Area A, section 5.



Fig. 9. Area A, section 6.

side by a curved line and on its other sides by natural fissures, the one at the bottom having been artificially enlarged. In this portion there can be seen a cup surrounded by three incised rings rather coarsely executed, the outermost measuring $2\frac{7}{8}$ inches in diameter. To the left and a little below the cup- and ring-mark is a figure which has a resem-



Fig. 10. Area A, section 7.

blance to a tectiform symbol of the palaeolithic and later periods on the Continent (fig. 7, No. 3). Still farther to the left is a design consisting of a number of nearly parallel lines which converge a little at one end. From the sides of this group others diverge outwards at slightly different angles. There is here a similarity to the pectiniform or comb-like symbol found in caves and rock-shelters on the Continent. Below, in the right-hand corner, like an island in the gutter, a pointed oval portion of the rock has been scored with transverse lines. Section 6 (fig. 9).—In the lower part is a grid with slightly convex sides

at the lower end of which a ladder-like design is tacked on at an angle. Above the grid and a little to the right are a number of deeply cut lines approximately parallel. Both to the right and left of these are other lines running at right angles but more finely engraved. Near the centre of the picture and marked with a white cross is a small design which may



Fig. 11. Area A, section 7A.

represent a human figure highly conventionalised (fig. 7, No. 2). It is formed by a small hollow, which represents the head, and single strokes for the arms and one for the body. The latter bifurcates to form the legs. In the upper left-hand corner (but upside down, as seen in fig. 9) is what may be described as a sign having a resemblance to the tectiform symbol, representing perhaps a hut, tent, shelter, or trap. In the centre between the outer uprights of this symbol are several incised lines (fig. 7, No. 4). Below are two cup- and ring-markings, each consisting of a small pecked hollow within two concentric incised circles, the outermost

rings measuring $3\frac{1}{4}$ inches in diameter. Breaking the continuity of the rings is a rudely pecked line which joins the two cups. To the right and nearer the centre is at least one other cup- and ring-mark made similarly. The other portion of the pecked design may also be a cup- and ring-mark roughly executed.

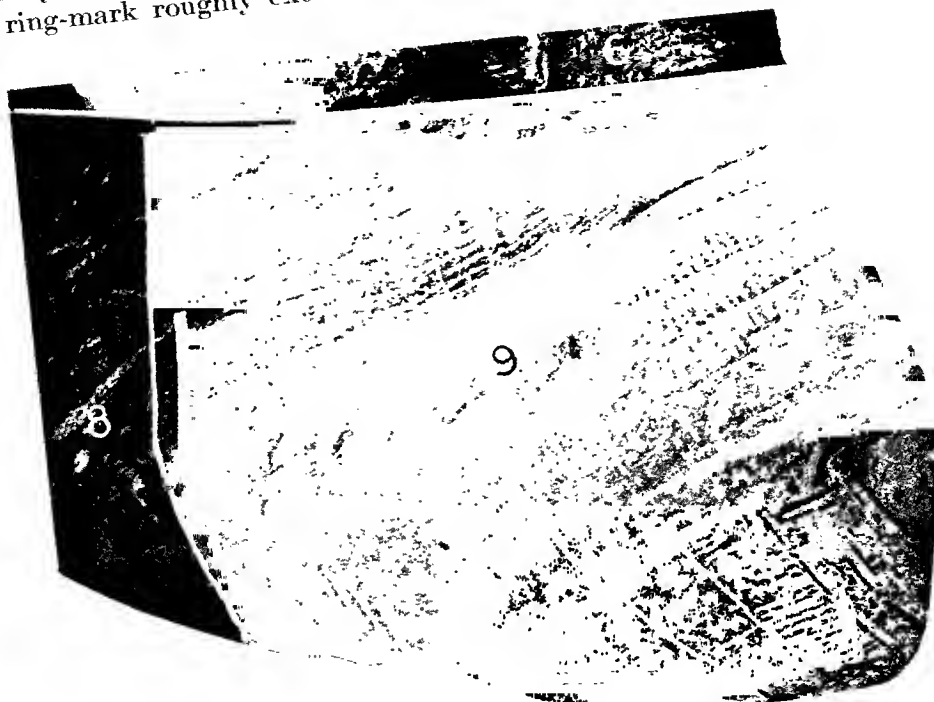


Fig. 12. Area A, section 9.

*Sections 7 and 7A (figs. 10 and 11).—*The north-easterly and lower corner consists of a ledge 5 inches below the general level of the rock. Near the centre is a pecked hollow surrounded by an irregularly incised ring. Depending obliquely from this is a sub-oval design, the whole resembling a swaddled human figure, the total length of which is 10 inches. On either side of the upper part of the figure are approximately parallel incised lines. From the middle of the left side and extending downwards and round the foot are a number of radiating lines.¹ The

¹ Compare with the incised drawing on a stone from the Azilian de Sordes, Landes, France, published in the *Congrès International d'Anthropologie préhistorique*, Geneva, 1912, and reproduced in *La Pileta*, fig. 24, p. 59.

surface on the right side has disintegrated. On the upper portion of this section there is a herring-bone design (fig. 11, No. 7A).

Section 8.—In this section there are only a few indistinct lines.

Section 9 (fig. 12).—This appears to have been covered with grid-like patterns. The best one shows clearly in the illustration. It measures $7\frac{3}{4}$ inches in length and 6 inches in greatest breadth. Five bars running one way are crossed about right angles by twenty-one others.



Fig. 13. Area B.

AREA B.

Area B (fig. 13).—This area measures 4 feet in length by 2 feet 11 inches in greatest breadth. On the left-hand side below a natural channel is a ladder-like pattern and near the right-hand corner at the bottom

a cup- and ring-mark. A few inches to the right is a curved line which appears to connect with the ring. Both cup- and ring-mark and the curved line have been made by pecking, but it cannot be said definitely that the two are conjoined.

AREA C.

Area C (fig. 14).—This part measures 8 feet 3 inches from north to south and 2 feet 10 inches from east to west at its widest part. The natural channels on its surface have been artificially enlarged, and on the left side, just above the second channel from the top, there is a cup- and ring-mark formed by pecking. The diameter of the outer ring is $3\frac{5}{8}$ inches. The other designs are roughly formed grids, incised lines nearly parallel, and others which converge at one end to form a tuning-fork figure.

AREA D.

Area D (fig. 15).—This portion is well preserved and measures 1 foot $11\frac{1}{2}$ inches by 1 foot $1\frac{1}{2}$ inch. It contains a single design consisting of a small cup contained within seven incised and roughly concentric circles, the outer going only half-way round. From the cup depend three lines, through which the rings do not pass.

The markings on the rocks at Traprain, although unusual, are not unique. There is in the Museum a small boulder of greenstone from Harelawside, Grantshouse, Berwickshire,¹ which bears a small cup- and ring-mark and a rectangular grid similar in technique and design to those at Traprain (fig. 16). Also, from the lower end of the grid there hang two pecked lines which converge slightly. At the end of the one on the left near the grid is a small pecked hollow, and another is placed centrally between the lines. The distance between Harelawside and Traprain is not far (about 20 miles), but the combination of cup and ring and the grid is so striking that the drawings at both places might have been made by the same artist, or by another who was familiar with the meanings of the emblems. In England at the Harrow Hill flint mine excavation, grid markings, analogous to those at Traprain but unassociated with cup- and ring-marks, were found inscribed on the walls of the shaft of one of the galleries, and a study of the excellent reproduction of these in the *Sussex Arch. Coll.*, vol. lxxvii. p. 123. No. 6, pl. vii., will show how close the resemblance is. The mine workings date to the

¹ *Berwickshire Naturalists' Club*, vol. xxvii., pl. xxi., p. 390.



Fig. 14. Area C.



Fig. 15.

late Neolithic Period. At Ilkley in Yorkshire, where there are a number of sculptured rocks with cup- and ring-marks and other designs, certain of the cup- and ring-markings are conjoined with a ladder-like pattern



Fig. 16. Sculptured Block from Harelawside, Berwickshire.

and some have ladder patterns depending from the rings.¹ In Ireland, at Slieve-na-Calliaghe, near Loughcrew (on stones which form part of the interior chambers of the cairns there), a few of the incised designs have a likeness to some of the geometrical patterns at Traprain, but spirals, cup- and ring-marks, discs, and other curvilinear designs greatly

¹ *Journal of the British Arch. Assoc.*, vol. xxxv. pp. 15-25.

preponderate.¹ To go farther afield, however, there is in France, carved on rocks in the region of the Grès de Fontainebleau, a number of geometrical figures comparable with ours, although I have been informed by the Abbé Breuil that the technique is different. There is some doubt as to the date of these, but it is not earlier than Neolithic and may be later.²

Comparisons could also be made between the patterns on the Traprain rocks and the carved and painted signs in other countries dating from the Palæolithic Period to later times. For instance, there are at La Pileta, Malaga, Spain,³ painted in coal black on the walls of a cave, a number of geometrically conventionalised signs comparable with our carvings. In the same cave there are others assigned to earlier periods, but the *signes noirs* are the latest of the series. This particular phase of art comes under the heading of the Spanish third group of paintings which persisted in that country through the Neolithic Period and into Chalcolithic times. But these are resemblances only and do not betoken an early date for our inscribed rocks.

How the actual cutting and scoring was done it is difficult to say. The weathered skin of the rock could have been cut equally well with either a sharpened flint or a metal tool. The cuts vary from $\frac{1}{8}$ of an inch in depth to a mere scratch. The section in some is V-shaped and in others the bottom of the V is flattened. Occasionally the implement appears to have been applied more than once to the same cut until the desired effect was produced, and from the appearance of some of these one is inclined to favour the use of a metal tool. Such pecking as there is on the stone could have been done equally well with a stone or a metal implement.

To deal with the vexed problem as to what these petroglyphs mean is not the purpose of this report. One can hardly believe that they are but meaningless figures made in some idle moment by a primitive artist. The work of inscribing the rock-surface was in itself laborious, and certain well-known elements of design have entered into its composition, such as the familiar cup- and ring-mark of the Bronze Age, the symbol which gives us our clue to the date. These carvings and paintings are often found in the darkest corners and recesses of caves and on exposed rocks not easily accessible. Among archaeologists who have made a special study of this art⁴ the general consensus of opinion is that they may

¹ *Proceedings*, vol. xxvii, pp. 294-338.

² *Bulletin de la Société Préhistorique Française*, vol. ix., 1912, pp. 537-551.

³ *La Pileta*, chap. vi., Institut de Paléontologie Humaine, Breuil, Obermaier, and Verner, Monaco, 1915.

⁴ For bibliographies on this subject see Burkitt's *Prehistory* and Obermaier's *Fossil Man in Spain*. Also Steward, *Petroglyphs of California and Adjoining States*, and Afrikansche Felszeichnungen, in *Zeitschrift für Ethnologie*, 1911, p. 141.

have belonged to some particular cult and used for purposes of magic or the performance of traditional rites, and that these caves and rocks with their peculiar delineations may have been sanctuaries or sacred places.

I have to express my thanks to those friends, too numerous to mention here, who have suggested various solutions for the elucidation of the carvings. The Society is indebted to the County Council of East Lothian for presenting such portions of the original rock as it was possible to cut out, and to Mr A. G. Robertson, quarry superintendent, for his invaluable help. We have also to thank His Majesty's Office of Works for presenting casts of the marked rocks, so that we have now in our Museum a permanent record of one of the most extraordinary petroglyphs ever discovered in Scotland, and on which perhaps more light may be shed in the future.

II.

EARLY SCOTTISH SPOONS.

BY COMMANDER G. E. P. HOW. R.N.. F.S.A.Scot.

In this short article I am anxious to show that, from very early days, a special type of spoon was peculiar to Scotland. Somewhat similar spoons are known to have been made on the Continent, but no contemporary English spoons resemble them in any way whatsoever. This fact appears to have been overlooked by almost all authorities who have written upon the subject; the reason being, in all probability, that so few early Scottish spoons have come to light.

Fig. 1 illustrates a spoon which is in the National Museum of Antiquities, Edinburgh. This particular spoon is illustrated and ascribed by Sir Charles Jackson in his *Illustrated History of English Plate*, vol. ii, p. 518, where he describes it as a "hybrid spoon of Scottish manufacture . . .," but states that he has come to the conclusion that the date of its manufacture is about half a century later than the year inscribed on the stem, and that the initials and the date were probably engraved in memory of a deceased person. I hope to prove that this spoon is unquestionably of the date inscribed upon it—that is, 1589. Sir Charles Jackson also states that the very early Scottish spoon illustrated on p. 512 in the above work, bearing the Edinburgh hall-mark for 1591–5, is of the type known to be characteristic of the sixteenth century in England. This spoon appears to be very similar in type to the Dundee spoon illustrated in fig. 4 (fully described later) which bears a much greater resemblance to the other early Scottish spoons illustrated in this article than to any sixteenth-century English spoons that I have yet seen.

In the Museum of Antiquities, Edinburgh, is a most interesting set of five spoons. These were treasure trove, having been found in a house at Irvine in 1865. They are described in an article by Dr Graham Callander, F.S.A.Scot., in the *Proceedings*, vol. lix, p. 125. It is probable that more than five spoons were discovered, as an identical pair, which unquestionably belonged to the same set, recently came under my notice (fig. 2). I have also been told that another example from the same set was sold to America some years ago, and it is not likely that these individual spoons would have survived had they been separated from the

set before it was originally hidden in Irvine. As can be seen from the illustration, this set is almost identical in design to the Canongate spoon in fig. 1. They bear, on the front of the disk at the top of the stem, the



Fig. 1. Canongate Spoon.

initials I★B, and on the back of the bowl the initials A C, and between these initials what appears to be a Y, but is actually an heraldic device, the Shake-fork of the Cunninghames. The marks on the stem are E H in monogram, on the right of this the Edinburgh town-mark, and on the right of this again G H in monogram. This G H is the mark of

George Heriot, who, as his mark is on the right of the town-mark, was evidently the Deacon. E H. on the left of the town-mark, is the maker's mark, and in this particular case can only be that of Edward Hairt, as



Fig. 2. Spoon found in Irvine.

no other workman of that period in Edinburgh bears these initials. George Heriot was Deacon in 1565-7, 1575-6, 1584-5 and 1589-91, and consequently these spoons can definitely be ascribed to one of these years. Even supposing, as has been suggested, but as I consider exceedingly improbable, George Heriot should have been the maker, and

Edward Hairt the Deacon, the fact that the latter was Deacon in the years 1579-83 indicates that these spoons were made and hall-marked in Edinburgh during the last half of the sixteenth century. This, I think, is sufficient evidence to prove that there is no possible reason for Sir Charles Jackson's assumption that the Canongate spoon was not made in 1589. From the records of the Canongate goldsmiths, recently placed at my disposal by Miss Wood, I find that one George Cunningham, Senior, is known to have been working in the Canongate in the year 1593, and, although another George Cunningham is mentioned in 1628, I think one can assume with comparative certainty that the spoon was actually made by George Cunningham, Senior, in 1589, the date inscribed on the front of the stem. Two spoons, fully described by Dr Callander, and illustrated in the *Proceedings*, vol. lix. p. 121. are very similar to those illustrated in fig. 3. The maker is John Scott, and the Deacon's mark is that of John Frazer, who was apparently acting *ex officio*. The spoons, however, can definitely be ascribed to the first half of the seventeenth century. The stems are wider, and more decorative, and, though the spoons are of later date, they are obviously of the same type as those illustrated in figs. 1 and 2. It is of great interest to note that these were also found in Irvine, and that they also bear initials of the Cunninghame family, and the heraldic device, the Shake-fork of the Cunninghames.

Fig. 3 illustrates two spoons from six of this same early type, in the Museum of Antiquities, also described by Dr Callander in the above-mentioned paper, which were found on the Hill of Culrain in Ross-shire about 1859. Three of these have the date 1617 engraved on the front of the stem. The other three are a little smaller, and differ slightly, as can be seen from the photograph. All six bear the initials I★S on the front of the disk at the top of the stem, and on the back of the bowl the initials C M. On all the spoons the only hall-mark is the maker's mark, I H, in a square shield. As there is no assay mark, it is probable that they were made in the Provinces.

The pair of spoons illustrated by Sir Charles Jackson on p. 519, as being the property of Mrs Maxwell, are again of this type, and, from the mark of George Cleghorne, the Deacon, their date can be fixed at 1648-50, or 1655-7. As Sir Charles Jackson states, spoons of this type, with broad thin stems, were not made in England at anything like so early a date as 1640. I think one can therefore presume that, not only was this flat-stemmed type of spoon made and used continuously in Scotland from the late sixteenth century, and possibly earlier, up to the date of the introduction into England of the flat-stemmed Puritan spoon of

Commonwealth times, but in all probability this type was actually introduced into England from Scotland.

The Dundee spoon (fig. 4), which referred to above, is of particular

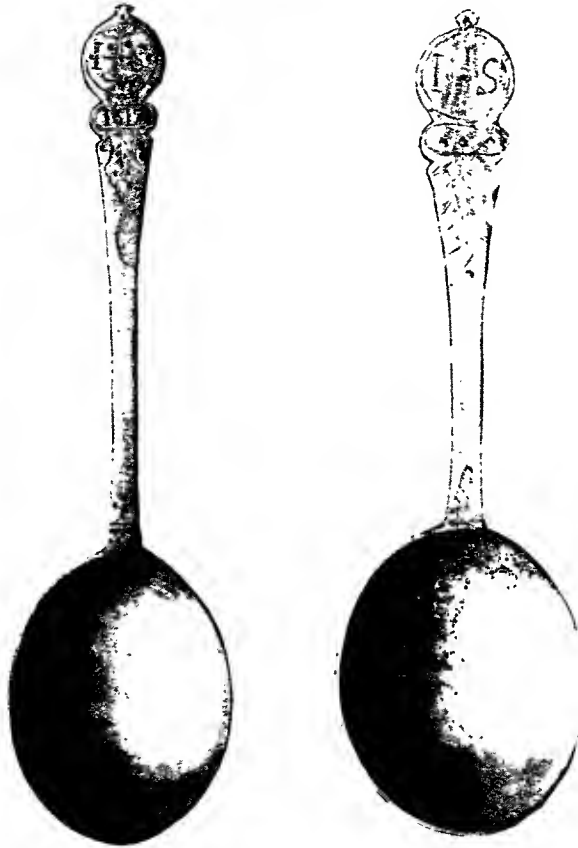


Fig. 3. Spoons from Hill of Culrain, Ross-shire.

interest. The flat stem, which is very thin, does not in any way resemble the English seal-tops of that date, nor did the contemporary English spoon join the bowl in quite the same way, most early Scottish spoons having what might be described as an immature rat-tail. The bowls of Scottish spoons are rounder in form, more like those of Puritan spoons

of the English Commonwealth period. The stems are quite different from those of English seal-tops and apostles, being four-sided, and much flatter and thinner. The finial, though cast separately from the stem, in the same way as the English seals were cast, is soldered on to the stem somewhat after the manner of many English provincial spoons, but cut diagonally across the stem, as opposed to the usual English provincial vertical cut. (The cast tops of almost all London spoons, and some English provincials, are let in with a V-shaped cut.) The top of the spoon illustrated is very narrow, in fact only a little thicker than the stem itself; totally different from any English seal-top that I have ever seen.

The hall-marks are the town-mark of Dundee, a pot of lilies; and the maker's mark, R. G., shown by Sir Charles Jackson as appearing on Dundee plate of about the years 1631-48. He states that the maker was Robert Gairdine, mentioned in the Dundee records in 1683. Even allowing that the plate of 1631 was made by the Robert Gairdine mentioned in 1683, this gives an unusually long working life to the man in question.

In contemporary writing on the head of the spoon are the initials D F., and on the back of the bowl the initials I D. The same initials appear on the famous Fergusson Mazer, made in Edinburgh in 1576. The spoon and the mazer were supposed never to have been separated until recently, having been handed down together in the Fergusson family. There is not the slightest question that the D F. and I D. on the spoon refer to the same persons as do the initials on the mazer, which are definitely known to have been those of David Fergusson and his wife Isobel Durham. David Fergusson, sometime tutor to James VI. came of an Ayrshire family which migrated to Dundee. (This Dundee connection would account



Fig. 4. Dundee Spoon.

for the design round the foot of the mazer consisting of pots of lilies, the Dundee town-mark.) I think there can be no doubt that this spoon was made in Dundee, either at the time of the wedding, or at the time when the mazer was made.

Ascribing this spoon, as I do, to *circa* 1576, the R. G. mark, though possibly that of a Robert Gairdine, is most certainly not that of the Robert Gairdine referred to by Sir Charles Jackson, to whom he ascribes. I consider erroneously, the Brechin Communion Cup, inscribed 1631.

Although it is not apparent in the photograph, there is a very strong resemblance in type between this spoon and the flat-topped Scottish spoons illustrated, the main difference being in the finial, and the fact that the stem is not quite so wide; but I cannot concur with Sir Charles Jackson's opinion that it in any way resembles contemporary English seal-tops.



Fig. 5. Spoon dug up in Haddington.

Fig. 5 illustrates a spoon which was dug up in Church Street, Haddington. In form it is somewhat similar to the English Puritan spoon of the Commonwealth period, though the decoration on the stem is typically Scottish. It is also interesting to note that the bowl is beaten direct from the stem without any sign of a rat-tail, or other support, as is the bowl of the Ayr spoon mentioned later. The marks are that of David Bog, the maker; the Edinburgh town-mark, and that of David Symonstoune, Deacon in 1665-7. As can be seen in the photograph, this type of spoon is a direct descendent from the earlier Scottish spoons illustrated, whereas it was a complete innovation when

introduced into England about 1650.

Though a considerable number of spoons must have been made in Scotland, even late seventeenth-century examples are exceedingly rare. Fig. 6 illustrates one of a magnificent set of trefids which I noted recently. They bear the Inverness town-mark, INS; the letter H, which, though yet unidentified, I consider may very possibly have been the date letter for the year 1688; and the maker's mark, R E, which is obviously that of Robert Elphlingstone. This man is known to have been a goldsmith in Inverness in the year 1687, but Sir Charles Jackson states that no example of his work has been found.

Plain spoons of the trefid type, made in Edinburgh, Glasgow, Aberdeen, and other provincial Scottish towns, though rare, are well known, and though many are typically English in type, some have very striking



Fig. 6. Inverness Spoon.



Fig. 7. Ayr Spoon.

peculiarities which I have seen only in spoons which I believe to be of Scottish origin.

Fig. 7 illustrates an exceedingly interesting and important spoon which, though of the trefid type, is to my mind typically Scottish. It

in no way resembles contemporary English trefid spoons. The bowl is round and is beaten out from the stem without any vestige of a rat-tail, in the same way as the bowl of the spoon illustrated in fig. 5.

It is marked in three places low down on the stem, and there is no assay mark, from which one can assume that it was made in the provinces. The maker's mark, in two places, MC conjoined, is that mentioned by Sir Charles Jackson as being on a quaich of the seventeenth century, in the possession of Mr J. Barclay Mirdoch of Capelrig. He states that it is probably the name punch of Matthew Colquhoun of Ayr, one of the thirteen provincial goldsmiths whose names are endorsed in the draft of the famous letter of the year 1687 or thereabouts. I see no reason to disagree with Sir Charles Jackson's assumption, and the interesting point about this spoon centres round the third mark, only part of which is visible. This mark evidently consists of a complete circle, in the bottom half of which is what is either a turretted castle or a windmill. The device in the top half cannot be deciphered. As the town-arms of Ayr are a triple-towered fortress with, on either side, the holy lamb, and the head of St John the Baptist on a charger, the lower device is, in all probability, the triple-towered fortress, and not a windmill, but until another example of this mark is found, the full device must remain uncertain.

I would suggest that it is probably the triple-towered fortress repeated thrice within a round shield: twice above, and once below. In any case, the spoon is of extreme interest, and with these marks to work upon it can reasonably be hoped that the full town-mark of Ayr will shortly be discovered.

Figs. 8 and 9 illustrate three most interesting spoons, the two with flat stems being most unusual and, though not in any way similar to most contemporary English spoons, they do bear a resemblance to some Scottish and continental spoons of the seventeenth century. As can be seen, they are somewhat similar to the Ayr spoon previously mentioned.

The seal-top and the larger flat-stemmed spoon bear the mark WL, conjoined, struck once in the bowl, and thrice on the back of the stem. According to Sir Charles Jackson this mark is probably that of William Lindsay of Montrose.

The other flat-stemmed spoon bears in the bowl a mark made up of a central pellet surrounded by five other pellets, somewhat resembling a rose. The same mark is thrice repeated on the stem. This spoon is of the same type as the larger flat-stemmed spoon, and would appear to have been made by the same man. I am not yet satisfied that these spoons are of Scottish origin, though as suggested by Sir Charles Jackson, they may quite possibly have been made in Montrose. Were it not for

the seal-top, which is very English in type, I would be inclined to think that Sir Charles Jackson was right.

Fig. 10 illustrates two very early spoons in the Museum of Antiquities,



Fig. 8. Montrose Spoons (front).

Edinburgh. The larger was found in a grave in Brechin, Forfarshire, with pennies of Alexander III. of Scotland, Edward I. and Edward II. of England, and the smaller was found at Windy Mains, East Lothian. They can be ascribed with comparative certainty to the late thirteenth, or early fourteenth century, but neither the stems, bowls nor finials can

be described as being in any way peculiar to Scotland, similar examples having been found in other countries.

I have not as yet seen any spoons with seal-tops, apostles or other



Fig. 9. Montrose Spoons (back).

typically English finials, which I consider to be of proven Scottish origin. There is an apostle (fig. 11), with the mark A B in the bowl, in the Museum of Antiquities, Edinburgh. It has a castle struck thrice on the back of the stem, and is ascribed by Sir Charles Jackson to Aberdeen, *circa* 1600-25. I am quite certain that this is incorrect. The A B is

probably the maker's mark, and the castle possibly the early Newcastle mark, as suggested by the late Mr H. D. Ellis in his notes, and by several other high authorities.



Fig. 10. Fourteenth-century Spoons from Brechin and East Lothian.

There is also in the Museum another apostle spoon (fig. 12) bearing the maker's mark only, stamped in four places, ascribed to George Robertstone, 1616-33. I consider it extremely improbable that this spoon is of Scottish origin as, had it been made by George Robertstone, it would most probably have borne the full Edinburgh hall-marks.

Quite apart from the fact that no other Scottish spoon with a similar bowl is known to exist, the mark G R bears a strong resemblance to that of George Reve of Bath, who made Bath tokens in the year 1638.

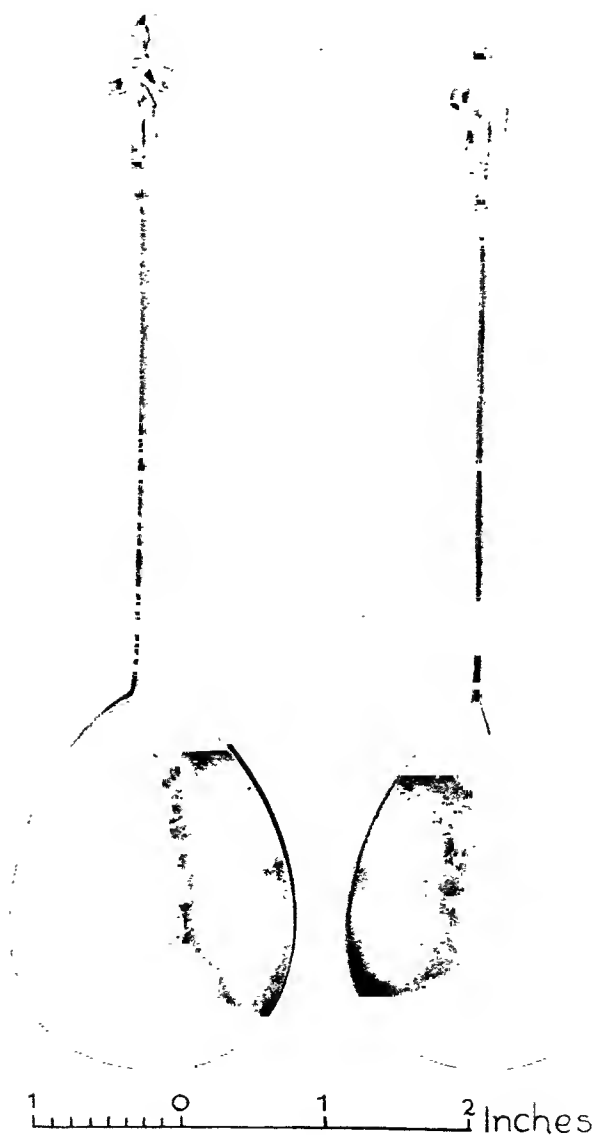


Fig. 11. Apostle Spoon.

and to whom I ascribe this typically English spoon, rather than to George Robertsons of Edinburgh, to whom it is at present ascribed by the Museum of Antiquities.



Fig. 12. Apostle Spoon

Fig. 13 illustrates a most interesting pair of trefid spoons which I have recently seen. The marks are a thistle; what appears to be a

catherine wheel; the letter H, similar to the Inverness mark which I suggest as a date letter for Inverness in 1688 (illustrated in fig. 6); and the maker's mark, SS crowned. Similar marks, without the thistle,



Fig. 13. Spoon—Unascribed make.

are mentioned by Sir Charles Jackson amongst his unascribed English marks. No thistle mark being known in England, I would suggest that the spoons are probably of Scottish origin, although the SS crowned is a most unusual type of maker's mark in Scotland at that period.

Although I have been trying to ascribe these spoons for more than two years, I have not yet been able to do so, and I would be most grateful to any of my readers who could throw light upon them. If they are



Fig. 14. Edinburgh Spoons.

Scottish, as I believe them to be, it is the earliest example of the thistle mark.

A point of interest to many readers will be the zigzag assay mark, well seen in figs. 2 and 14. In early days this form of assay mark was invariably used in Scottish assay towns, though, so far as I know, it was

never used in England, except possibly at Norwich and in the East Anglian district, where Dutch influence was predominant.

Since writing the above paper, some other important Scottish spoons have been brought to my attention.



Fig. 15. Aberdeen Spoon.

Fig. 14 illustrates a pair, the property of Sir John Noble, Bart., which bear the Edinburgh town-mark, and the mark of George Craufuird, both as Deacon and maker. George Craufuird was Deacon in the years 1615-17, 1621-2, and also 1633-5, and these spoons can therefore be ascribed definitely to one of these years.

As can be seen from the photograph, they are very similar to the other early Scottish spoons illustrated, and help to prove that this type of spoon was in general use in Scotland throughout this early period.



Fig. 16. Two possibly Greenock Spoons and another (front).

Fig. 15 illustrates a most interesting spoon at the Museum of Antiquities in Edinburgh, which I had previously overlooked. It bears on the back of the stem A G for A. Galloway, Aberdeen, 1672-8, stamped twice; and the assay mark. On the top of the stem, and also on the back, are engraved the initials R P. and on the back of the bowl the initials

MB: all in large capitals. The floral pattern on the front of the top, and on the back of the bowl, is typically Scottish, and in the latter place it is so drawn as to suggest a rat-tail, although this feature is quite

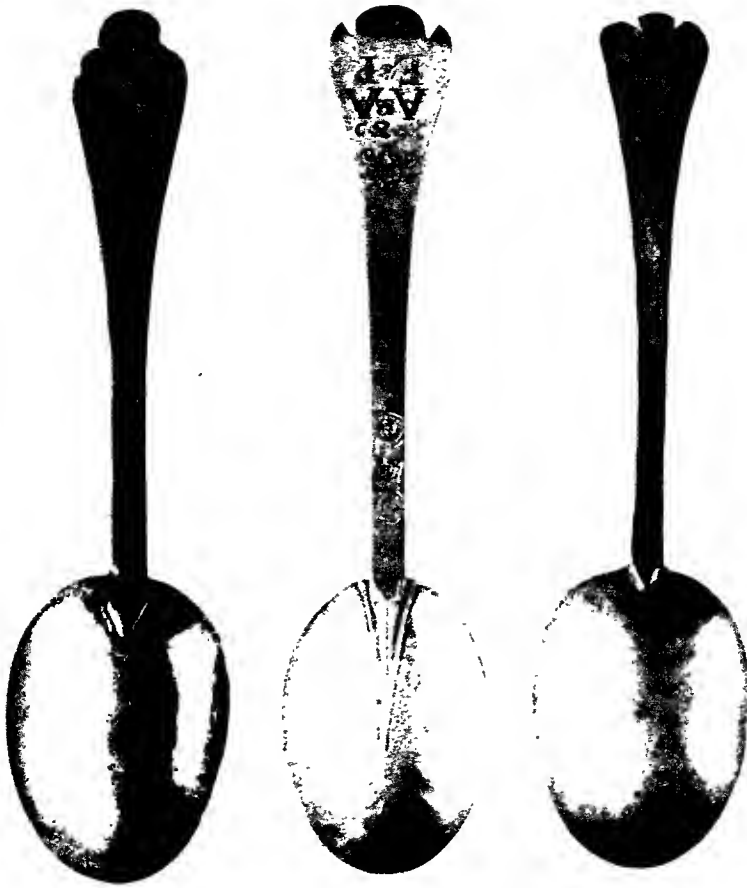


Fig. 17. Two possibly Greenock Spoons and another (back).

flat and not raised. There is a strong similarity between this spoon and two of those illustrated in figs. 8 and 9, tentatively ascribed to Montrose.

Figs. 16 and 17 show two spoons ascribed to Greenock by the late Mr H. D. Ellis, and one similar in type to other Scottish spoons, also from the Ellis collection.

The same marks appear on each of the first two spoons. They are similar in type to other Scottish spoons illustrated, and I consider that Mr Ellis's ascription may be correct. It is hoped that some local antiquary will be able to throw some light upon these previously unrecorded marks.

The third spoon is also of similar type, and bears a crude maker's mark once in the bowl and four times on the stem—apparently S L.

My thanks are due to the National Museum of Antiquities for their kind permission to reproduce figs. 1, 3, 5, 10, 11, 12 and 15; to Sir Charles Fergusson for fig. 4; and to A. M. Sharp, Esq., for fig. 7.

III.

UNRECORDED BERWICKSHIRE ANTIQUITIES. BEING THE CHALMERS-JERVISE PRIZE ESSAY FOR 1933. By ROBERT KINGHORN.

1. *Siccar Point Fort* is situated on the promontory of Siccar Point, on the coast, $\frac{1}{2}$ mile north-east of Oldcambus West Mains, in the parish

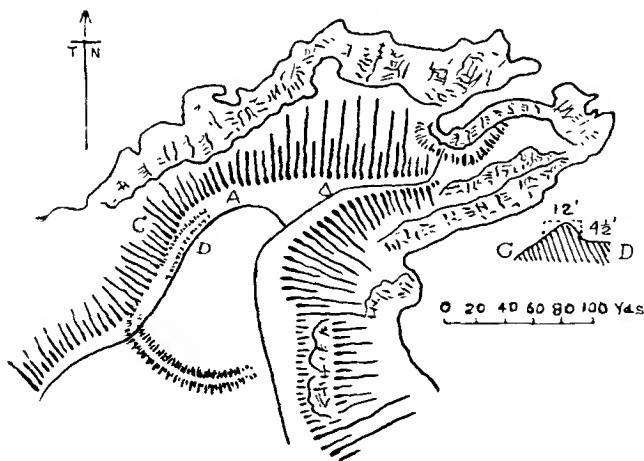


Fig. 1. Siccar Point Fort: Plan.

of Cockburnspath (fig. 1). The site is naturally a fine one, as it stands 200 feet above Ordnance datum. The fort is defended on three sides

by steep slopes and precipitous cliffs washed by the sea. On the landward side the promontory has been cut off by a broad earthen mound, the curve of which can be faintly traced in the corner of a field. The greater part of the area of the fort is now under cultivation. On the west side, and outside the stone dyke enclosing the field, the rampart runs along the edge of the slope for more than 100 yards. At the point C D on plan it shows a height of $4\frac{1}{2}$ feet. The fort measures 160 yards long by 90 yards broad. On the slope to the north at A on plan, and about 12 feet below the top, the ground has been terraced out for about 40 yards in length and 12 yards in width, thus giving a more level site. On the inner side of this terrace hut-circles probably had their position as we may take note of nettles growing on the spot. On the outer edges of this terrace and down the steep slope to the precipitous part of the cliff a considerable part of the "kitchen midden" of the fort has been preserved. The extent of the midden can be easily traced, the dark soils of the latter contrasting strongly with the red soil of the adjoining field. The midden is exposed at several places: at rabbit scrapes, and where the turf has been broken little escarpments show food remains embedded in the soil. At one of the exposed parts the midden has a depth of 2 feet 3 inches. The friable soil at these faces is gradually crumbling landwards and continually exposing a fresh section. An examination showed numerous shells and fragments of bone mixed with the earth. Apparently large quantities of the Periwinkle, *Littorina littorea*, and the common Limpet, *Patella vulgata*, were consumed. The bones found were those of the ox and the sheep. Some years ago the antler of a deer was found. The shank bones had been split to extract the marrow. Some of the bones showed signs of having been gnawed, perhaps by dogs. Other objects found were a fragment of coarse pottery of a red colour outside and dark grey inside: the shard measured 1 inch in length by $\frac{3}{8}$ inch in thickness. A piece of iron slag was also found. Nor were the vanities unrepresented. A bead of blue glass was found *in situ* on the face about 1 foot from the surface. The bead measured $\frac{9}{32}$ inch in width by $\frac{1}{8}$ inch in thickness, the perforation being $\frac{1}{8}$ inch in diameter. This was pronounced to belong to the Early Iron Age.

2. *Corn Fort, Hareness Point*, is situated on a promontory 900 yards north-west of the town of Eyemouth (fig. 2). A narrow bay separates it from the point known as Eyemouth Fort, a sixteenth-century fortification in a ruined condition. The promontory of Hare or Hairyness, as it is variously spelt, lies between the bay just mentioned and a curious inlet of the sea known as Weasel Lock. The level part on which the fort is situated is about 80 feet above sea-level. To the east the cliff

runs steeply down to the sea, and to the north-east the rocks are broken up into rough gullies and end in natural walls going sheer down into deep water.

The fort has an over-all length of 117 yards. In width it measures 65 yards at the rampart, 38 yards just before contracting to a neck 15 yards across: beyond which it expands to an almost circular part, 32 yards in diameter. The rampart, which is 65 yards long and 15 feet wide is flat on the top, appears to be entirely earthen, and does not seem to be much reduced in height. No doubt a stockade would be added to the defence. At the point A B on plan the outer face shows a height of

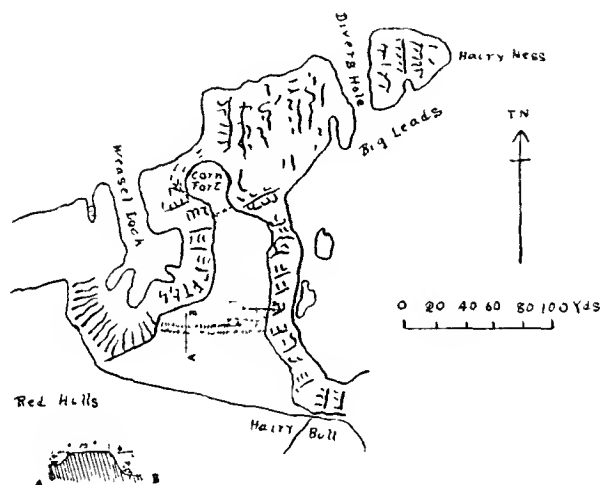


Fig. 2. Corn Fort, Eyemouth: Plan.

2 feet 9 inches, while the inner, owing to the ground being low, is 5 feet 6 inches. The entrance has been at the west end close to the cliff. Two short mounds, one 6, the other 7 yards long, have served to guard the entrance. Eighty yards north of the main rampart, a low mound 15 yards long is traceable running from edge to edge of the cliffs. Its position, a few yards inwards from the narrowest part, is obviously to enable it to make connection with a more precipitous part of the rock. Parts of the cliffs, though steep, could be scaled from the sea, and this slight defence has been designed to render the principal area of the fort more secure. In the south-east corner of the fort are four foundations, rectangular on plan. One, about 20 yards from the east end, is partly within the line of the rampart. Two, next the cliff, adjoin each other. The most northerly, having an entrance at the north-east corner. The foundations appear as banks still standing about 1 foot in height. Marks

of a larger foundation. 24 feet by 15 feet, are traceable about 20 feet north of the first mentioned one. Faint indications of two circles, 10 feet in diameter, lie between the two groups close against the rampart. The latter, as will be seen from the plan, is unlike the defensive mounds of the other promontory forts on the Berwickshire coast. It curves very little and its broad platform-like top differentiates it from the other constructions of this nature. If the rampart and huts are contemporary, the difference is more marked. Probably the fort is later in date than the others described. Reference to the *Inventory of Ancient and Historical Monuments in the County of Berwick* does not show any similar work in the county.

3. *Lamberton Shiels Fort* is situated on the sea-coast, $\frac{1}{4}$ mile east of Lamberton Shiels, in the parish of Mordington. The position is a shelf

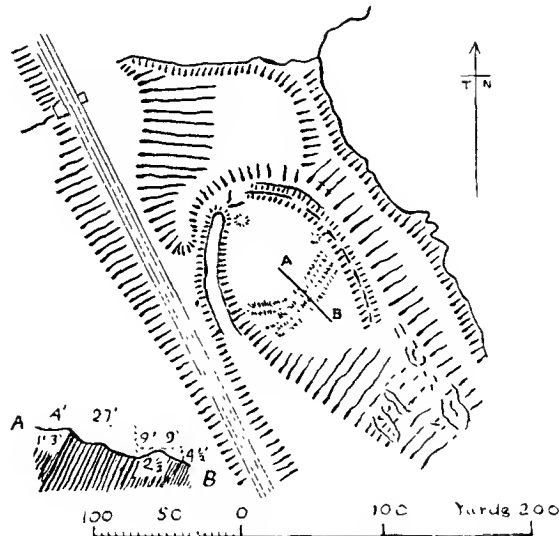


Fig. 3. Lamberton Shiels Fort: Plan.

of land about 100 feet above sea-level (fig. 3). The site is defended by precipices and steep slopes to the east and north. To the west a steep narrow ridge of rock rises about 70 feet above it, and gradually to the south-west becomes a steep slope. There are traces of a ditch running from the base of the rock to a point outside the line of the ramparts. To the south-by-east the ground falls with moderate steepness. Two curved ramparts, apparently of earth, defend the fort on this side. The inner rampart bifurcates towards the west. The fort measures 75 yards long by 55 yards broad. Two small hollows, which may mark the sites

of hut-circles, lie within the area: one to the north, the other to the east. The fort is so overlooked and dominated by the ridge of rock, and the high ground to the west, that the defence of the site would seem to require some work of a flanking nature. A mound running down the steep slope may have partly served this purpose, but the ground at the top has been so much interfered with by an earthwork of later date, and the making of the adjacent railway-cutting, that it is impossible to follow out the details.

4. *Hareheugh Craigs Fort* is one of the most interesting inland forts in Berwickshire. It crowns a high, narrow, basaltic ridge of "crag

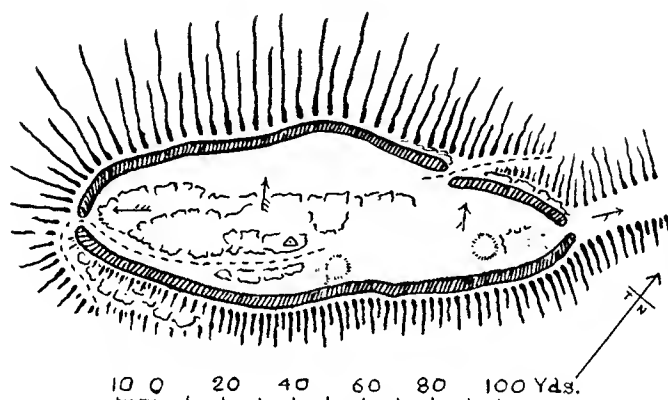


Fig. 4. Hareheugh Craigs Fort: Plan.

and tail" formation, $\frac{1}{4}$ mile east-by-south of Stenmuir, in Hume parish (fig. 4). The highest part of the crag has a height of over 700 feet above sea-level. The sides of the crag are everywhere steep and precipitous, except at the east end or "tail," where, as is usual in formations of this nature, morainic material sheltered by the crag forms a slope. As the "crag" in this case is narrow, the "tail" is somewhat steep. The north side of the crag has the greatest fall, about 100 feet. To the south the fall is 40 feet to a depression furrowed out by glacial action. Beyond this the ground rises to another rocky knoll of smaller extent. The rock, exposed in a quarry at the west end, shows a very compact basalt, closely jointed with the columnar formation characteristic of this kind of rock. Towards the sun the rock-fissures have been widened by atmospheric influences. This would make the quarrying of the surface stone comparatively easy.

The fort measures 137 yards in length by 44 yards at the widest part. Its axis points north-east. All the summit of the crag has been

surrounded by a stone wall, the foundations of which are in places traceable, notably along the south side. A part of the rampart here shows the stones rising above the turf in so straight a line that it is evident the walls were constructed in a careful and workmanlike manner. The rampart at this part has apparently been 9 or 10 feet thick. It is constructed entirely of stone taken from the crag itself, and as it is built on the edge of the precipice no great height of rampart would be required. The stones have mostly disappeared. In all probability they would be thrown over the edge of the crag and carted away for building purposes. Only the foundations at grass-level are now visible. The fort has had three entrances, the main approach having been at the east end up the slope of the "tail." This moderate slope would easily permit of stock being taken into the fort. At the entrance the crest narrows to about 21 feet in width. The entrance, 6 feet wide, is still flanked by two large stones on the north side. Another entrance lies at the west end. The track winds upwards to it among the rocky outcrops. In parts the track, while mostly natural, seems to have been improved by quarrying the rock. No doubt all stone got in this way would be used on the ramparts. A third entrance lies to the north and would be easily defended. It is approached by a track slanting up the steep slope and continuing as a narrow path along the precipitous edge of the crag. As it is only about 40 yards from the main one it was probably used when the wider and more vulnerable entrance was securely blocked.

Several hut-circles are noticeable within the rampart. One, 15 feet in diameter, lies within the east entrance; another, 23 feet in diameter, lies 10 yards farther in. Two more, both 18 feet in diameter, are placed near the wall half-way along the south side. The rock seems to have been quarried near the last two to provide level ground. Other depressions and levelled parts doubtless mark the positions of more. A growth of nettles marks the spots where the ground has been disturbed by habitation. The medial line of the crag is a ridge of rock with an abrupt fall on either side. Many outcrops occur in the interior, especially towards the west. The highest rises like a little acropolis, about half-way along. It is easy to visualise that this rocky elevation must have played a part in the communal life of the settlement. The view from it is a noble one: northward are the Lammermuir Hills, southward across the valley of the Tweed the Cheviots, westward are the Eildons and Border hills, while to the east stretches the wide plain of the Merse. In the foreground to the north-east the noted border stronghold, Hume Castle, arrests the eye.

As already stated, a quarry has been opened at the west or "crag"

end. The stone is of excellent quality to meet the insatiable demands of our modern roads for metal. Not much of an inroad has as yet been made on the "crag," but the electric pylons with their unlimited load of power are in the vicinity. Were electrically driven stone-crushing machinery erected, it might easily happen that the site of the fort would be seriously interfered with. It is regrettable that the ramparts have been removed. It would be more so were the rock itself to be devoured. The crag is a natural feature perfectly adapted to be an ancient place of strength, almost a ready-made fort before the ramparts were constructed. The fort was discovered by the late Mr James Hewat Craw who informed me that it was its obvious suitability for the site of a fort which led him to investigate it, and prove his surmise correct.

5. *Haly Jo Fort* is situated on an uncultivated knoll in the Shilments Field on the farm of Lumsdaine, in the parish of Coldingham (fig. 5). It is $\frac{1}{2}$ mile north of the farm-steading and 100 yards from the sea-cliffs. As we are now approaching the highest cliffs on the Berwickshire coast, the fort has an elevation of 500 feet above sea-level. On the west and north of the knoll the ground falls sharply, but more gradually to the east, where two earthen and stone mounds defend the site. A setting of stone remaining on the outer face of the inner rampart is much reduced in height. The mounds at A B on plan show a height of 2 feet. The entrance is at the south-east angle of the fort, and from it a single rampart can be traced for some distance along the south side where the slope becomes gradually steeper. The defence measures 67 yards long by 29 yards broad.

The name Haly Jo is a rather curious one. The prefix "Haly" occurs in several place-names on the Berwickshire coast: Halydown, and Halyhole the name given by fishermen to a small bay near Lamberton Shiels, are examples.

6. *Pettico Wick Fort* occupies a small promontory 170 yards south-west of Pettico Wick harbour, which is situated at the north-west end of the valley that cuts off the great promontory of St Abbs from the high cliffs on either hand (fig. 5). The fort has an elevation of 130 feet above sea-level, and measures 47 yards long by 43 yards broad. The promontory has been cut off by a curved rampart 45 yards in length. The rampart, which is much reduced by cultivation, shows a width of 21 feet. At the point A B on plan it is $1\frac{1}{2}$ feet in height. The entrance is close to the cliff at the south-west point. This has a very fine setting as the promontory, though of moderate height, is a very picturesque one. The contorted rocks with their sea-washed caves rise on the west to the great fort-crowned cliffs at Earnsheugh, 500 feet above the sea, while to

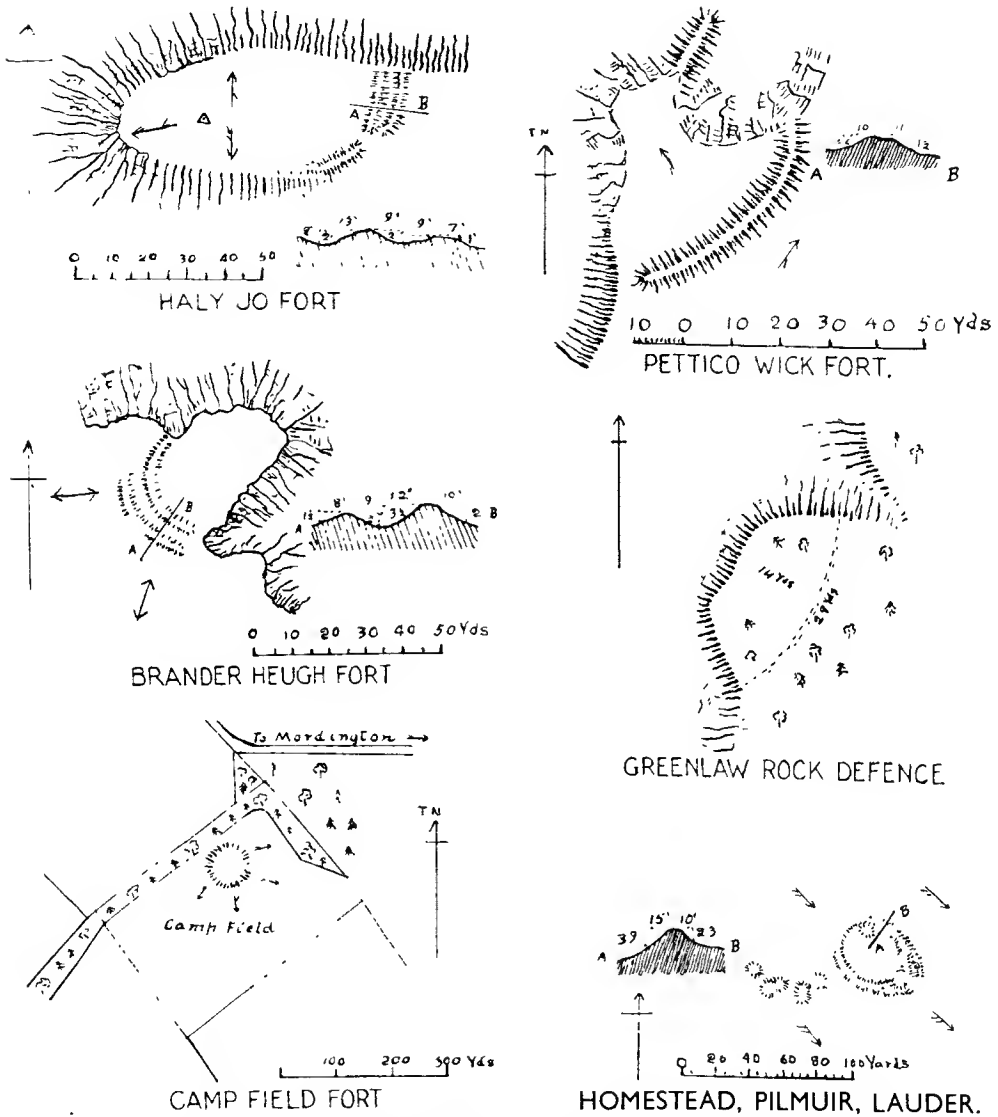


Fig. 5. Plans of Haly Jo Fort; Pettico Wick Fort; Brander Hough Fort; Greenlaw Rock Defence; Camp Field Fort; and Homestead at Pilmuir, Lauder.

the north rises the noble headland of St Abbs. This fort has not been recorded before.

7. *Brander Heugh Fort* is situated on a promontory on the wild sea-cliffs known as Brander Heugh, near Lumsdaine, and 400 yards east of the mouth of Dowlaw Burn, in Coldingham parish (fig. 5). The site has an elevation of 400 feet above sea-level. The fort measures 40 yards long by 23 yards broad. The promontory has been cut off on the landward side by an earthwork consisting of two crescent-shaped mounds measuring 38 yards and 24 yards in length. The mounds are separated by a trench $3\frac{1}{2}$ feet deep at the point A B on plan. The entrance was probably close to the cliff at the south point.

This fort, like those at Siccar Point and at Haly Jo, is recorded in the *History of the Berwickshire Naturalists' Club*, but it has not been described or figured.

8. *Greenlaw Rock*.—This is a "crag and tail" formation about 800 yards south-east of Press Mains Farm, in the parish of Coldingham (fig. 5). It is a prominent feature on the north side of the valley of the Ale Water, as the crag rises about 100 feet above the level haugh. The rock facing north-east has been made more precipitous by quarrying. The site is an ideal one for a fort, and it was somewhat surprising to find only slight traces of a small defensive work on the summit. A curved line, chiefly marked by nettles and thistles, with traces of a ditch at the north end, indicated that a small place of security—hardly to be dignified with the name of fort—had been constructed on the top of the crag. The curved line measures 29 yards in length, and the area within it 14 yards across at the widest part.

9. *Camp Field Fort* is situated on a knoll in the Camp Field, Greenfield Farm, in the parish of Foulden (fig. 5). It is distant about 800 yards east-by-south of the farm-steading, and has an altitude of 620 feet above sea-level. An almost circular single rampart 79 yards in diameter has been nearly obliterated by cultivation. The ground falls steeply to the south-east and a wide view is commanded by the fort in this direction. The camp was reported by me some years ago, but it has not been described or figured before.

10. *Homestead, Pilmuir, Lauder*, is situated in a wood known as the Under Cover, 600 yards east-by-north of Pilmuir farm-steading, and at an altitude of 850 feet above sea-level (fig. 5). The position is a fairly steep slope, half-way along the wood and 63 yards from its southern edge. The homestead measures 42 yards by 37 yards, the longer axis being parallel to the slope. The interior is much hollowed out; the excavated material forming a rampart of earth and stones 3 feet 9 inches

above the interior and 2 feet 3 inches above the exterior. There is no outer trench. A hut-circle at the north side is 21 feet in diameter. The entrance is to the south-east and is protected by an additional mound springing from the main rampart some 20 yards from the entrance on either side, and bifurcating so as to form a triple defence to the entrance. To the west lie five circular or oval huts, much hollowed out from the steep bank. This homestead, which was discovered by the late Rev. Wm. McConnachie, D.D., has not been reported before.

11. *Black Dyke, with Pitted Trench, Lamberton Moor.*—A black dyke with this curious form of trench runs across the easterly part of Lamberton Moor. The dyke can be traced from a point on the somewhat rough road which goes by Catch-a-Penny over the moor, some 320 yards in a southerly direction from where the small burn crosses the road and enters the little ravine down which it flows. This water-course is often dry as part of the water is diverted to feed a pond, but the spot is easily found. The dyke goes in a south-by-east direction, and ends abruptly at a bare part of the moor. Across the road it has been levelled by the reclamation of the land, but it could not be much longer as a little farther down the land has once been a swamp. The dyke has a length of 276 yards and a breadth of 10 feet, and the trench with the pits, which lies on the south side, about the same. These pits are about 9 or 10 feet apart, and still show a depth of from 10 to 14 inches. About 64 yards from the south end of the dyke there is a gap 15 yards wide. This form of trench seems to be of an early as well as a scarce type. No satisfactory explanation of the use of the pits has ever been given. The late Mr Craw in his paper, "The Black Dykes of Berwickshire," *History of the Berwickshire Naturalists' Club*, vol. xxvi, p. 361, suggests that "the pits may have been formed for the purpose of conserving water." Some of the pits in other trenches where the ground is level would seem to suggest this, but the one on Lamberton Moor would not be suitable for such a purpose. Moreover, there are copious and unfailing springs near both ends.

12. *Cultivation Terraces, Chester Hill, Aylton Parish.* In the east-most corner of the field in which the fort of Chester Hill—illustrated in the *Inventory of the Ancient Monuments, Berwickshire*, No. 10—is situated, there is a group of cultivation terraces (fig. 6). They begin at the foot of the hill below the annex to the fort, and extend upward to the plateau on which the fort is placed. They have been obliterated by cultivation on the top of the bank and also beyond the hedge to the east. The lowest terrace measures about 80 yards in length by 17 yards in width. The others gradually shorten and are from 5 to 9 yards broad.

There are eight terraces in the group. Farther to the west, to about the end of the ramparts of the main fort, the land lies below the craggy summit like a talus with a slope of about 40 degrees. All this part shows



Fig. 6. Cultivation Terraces, Chester Hill Fort: Plan.

narrow terrace markings from 6 feet to 10 feet wide. A road has led down to them from the west end of the fort. The terraces are clearly visible from the great north road near Greystonelees Farm, Burnmouth.

13. *Small Cairns, Wheelburn Law.*—On the south slope of Wheelburn Law, in Lauder parish, about $1\frac{1}{4}$ mile south-west of Broadshawrig, there is a group of about a dozen small cairns among the heather.

IV.

AN ACCOUNT OF THE EXCAVATION OF THE STONE CIRCLE
AT LOANHEAD OF DAVIOT, AND OF THE STANDING
STONES OF CULLERLIE, ECHT, BOTH IN ABERDEEN-
SHIRE, ON BEHALF OF H.M. OFFICE OF WORKS. BY
H. E. KILBRIDE-JONES, F.S.A. SCOT.

From a study of the various accounts of investigations carried out within stone circles, it will be observed that any complete examination of such a monument can be regarded as a pioneering achievement. Past investigators, if they were scientifically inclined, have contented themselves with a series of trial trenches within the area of the main circle; whilst others, with less laudable ideals, have pillaged the centre to satisfy their own curiosity. By these means many erstwhile impressive monuments have been very nearly extirpated, and their ruin has usually been completed by the wanton farmer in search of a gate-post or a lintel for a doorway. This spectacle of degradation, to which many monuments have been reduced, has encouraged a few thoughtful proprietors to take immediate steps for the preservation of those in their own possession; and through the foresight of their respective owners, the two monuments which form the subject of this report have been placed under the guardianship of the Commissioners of H.M. Works—the former by Col. Seton of Mounie, and the latter by Mr Thomas Innes of Learney, Carrick Pursuivant. Both stone circles, therefore, are now under the care of the Ancient Monuments Department; and I was requested by the Inspector, Mr J. S. Richardson, to undertake the immediate supervision of the excavation of both monuments. I should like to record my thanks to the Department for the opportunity thereby afforded me of examining two such complete and interesting monuments. Mr J. P. Bushe-Fox, Chief Inspector of Ancient Monuments, paid a personal visit to both sites, and Mr Richardson visited one of them on two occasions and the other on three, and I am under an obligation to both of them for the suggestions, advice, and encouragement they gave me. I desire also to express my thanks to Mr J. Wilson Paterson, Chief Architect, for having had the Ancient Monuments Department's surveys prepared at such times as suited my convenience; and to the Commissioners of H.M. Works for permission to use these records for this account.

The examination of the human remains from both monuments was kindly undertaken by Professor Alexander Low, Anatomy Department, Aberdeen University; and the charcoal was kindly examined by Dr E. V. Laing, Forestry Department, Aberdeen University.

PART I.

THE STONE CIRCLE AT LOANHEAD OF DAVIOT.

The Loanhead stone circle stands upon a plateau just below the summit of a small hill attaining a height of 531 feet above Ordnance datum, and it is situated roughly 183 yards almost due north of the farm of Loanhead. The site, prior to the planting of the wood now



Fig. 1. Stone Circle at Loanhead of Daviot, Aberdeenshire.

crowning the hill, must have commanded uninterrupted views on all sides excepting the north-west, the summit of the hill proving to be the obstruction on that side. To the north, and half a mile distant, is the stone circle of New Craig, situated upon another hill of equal height; to the west and south are fine views of the Hill of Culsalmond and Ben-achie, and the valley of the Urie; whilst Old Meldrum lies three and a half miles to the east at the head of the valley of the Lochter Burn. Viewed from any of the surrounding valleys, the hill stands out against the sky in a striking manner. Down the brae to the south-east lies the village of Daviot, about half a mile distant, where, in the kirkyard, there once stood another stone circle, long since despoiled, and finally completely removed by order of a former minister.¹ Almost at the summit of the hill itself is a large outcrop of rock which has been quarried at some remote period, perhaps to supply some of the stone for the circle itself.

The land in the neighbourhood of the stone circle has already yielded

¹ This apparently occurred about the year 1820, *vide* the *New Statistical Account of Scotland*, vol. xii. (Aberdeen) p. 822.

prehistoric remains. In 1817 an urn was found in the farmyard at Loanhead, and several more urns in a nearby field, about 1000 feet distant in a north-easterly direction. To the east of the circle, close by a stone dyke which descends the brae at this point, a "brass dirk" and a stone cist were found in 1832.¹ A "stone ladle" is also said to have been found within the circle itself.²

Apart from these discoveries, other features have been noticed lately. On the occasion of my first visit to the site, Mr Richardson drew attention to the existence of a low bank extending in a south-easterly and a north-westerly direction, and rather closely associated with the stone circle on the eastern arc of the circumference. In addition, there was a curious ring of low stones to the south of the circle, and a mound, apparently of artificial formation, on the west. To the west of this mound I discovered a saucer-like depression this summer, revealed by the removal of grass and raspberry canes; and, following the uprooting of a tree near the middle, no less than fourteen potsherds were recovered, including two rims, and all of Iron Age date: so that the archaeological possibilities of the hillside would appear to be almost unlimited. Fortunately, these features are all within the area enclosed by H.M. Office of Works.

For the present, however, we are concerned solely with the stone circle, which stands out impressively against the sky as it is approached through the wood. It is of moderate size, being 64 feet in internal diameter, and it is formed of ten monoliths (five of which were prostrate) and a large Recumbent Stone, situated, in keeping with the general peculiarities of this type of circle, on the southern arc of the circumference. The circle is one described by F. R. Coles, who, in giving it his "careful attention," pronounced it to be the sole example possessing a double recumbent stone.³ Actually, the so-called double recumbent stone really consists of the two halves of a single mass, which has split in twain owing to the presence of a "dry."

Prior to the commencement of work, the stone circle presented rather

¹ These are all recorded on the 6-inch Ordnance Map.

² Three stone cups, probably similar to the "ladle" discovered here, were found in a cairn, presumably of the Bronze Age, at Woodside Croft, Hill of Seares, Culsaund, See J. Graham Callander, *Proc. Soc. Ant. Scot.*, vol. I, p. 145.

³ F. R. Coles, "Stone Circles of the North-East of Scotland," *Proc. Soc. Ant. Scot.*, vol. XXXVI, p. 518, and fig. 36. Bishop Browne, *Antiquities in the Neighbourhood of Dun Echt*, p. 70, concluded likewise. However, it did not seem to occur to either to make a simple comparison between the two inner faces of the cleft stone, there to see upon one a positive protuberance, whilst upon the other would be a negative equivalent in the shape of a hollow; and throughout the length of the cleft, where any positive feature occurred, its negative counterpart was visible upon the opposite face. Mr Coles' drawing apparently supports his contention; and he states further that he could walk comfortably between the two halves. Reference to fig. 5 will acquaint the reader with the true state of affairs.

a dilapidated appearance, with a large gap left in the circumference by the prostrate monoliths, some of which were almost completely hidden in the growth of grass and weeds: and none of the monoliths showed to a greater height than 5 feet 9 inches.

For the sake of clarity, we begin with a description of the monument at the termination of operations carried out this summer, considering the lower levels first and the higher later.

THE CENTRAL RING CAIRN.

Within the main circle of monoliths lies an Inner Ring enclosing a cairn of large proportions (see Plan, Pl. I., p. 196), the actual diameter of which was 54 feet. In the north and north-west sectors the cairn had been quarried extensively, and, apart from a few isolated earth-fast stones, everything had been removed. There was a considerable accumulation of loose earth in this area, amongst which were a few potsherds, found at varying depths: whilst upon the hard reddish-brown compacted layer, revealed by the removal of this superincumbent earth, many more were found. This pottery, all of Iron Age date and indicated upon the Plan by Nos. 108, 130, 131, 137, 138, 139, 140, 146, 147, 149, 150, 151, 152, 153, 172, 173, had undoubtedly arrived there during the quarrying of the cairn. One probable exception is No. 149. Several rather small sherds of hard, black ware, containing fine grit, were found grouped together within a circle of 9 inches diameter marked out by the presence of black soil which extended to a depth of 1 inch into the subsoil, the level of the latter here being 2 inches below that of the hard compacted layer referred to above. Amongst these sherds were the fragments of three rims, one of which represented the sole piece of decorated ware found throughout the entire excavation (fig. 14, No. 11) excepting, of course, that pottery of the Bronze Age also found within the circle. This circle of black earth had all the appearance of being the filling of a post-hole: although we must not overlook the possibility that it may have been a hole dug to receive the complete vessel, the vessel becoming damaged and broken up by the destroyers of the cairn.

On the south side, what remained of the cairn¹ was in a more or less undisturbed condition, with the exception of two or three very small disturbed areas, apparently the result of former unscientific attempts to discover something. On the east side the cairn ended rather abruptly, and, beyond, disturbance was considerable. Continuing round by the

¹ The cairn probably attained something like the height of those at Clava (James Fraser, "Stone Circles of Strathnairn," *Proc. Soc. Ant. Scot.*, vol. xviii, pp. 340-350). These circles, of course, are of a different period and structure, and our analogy concerns the height of the cairn only.

Inner Ring on the north-east side, however, the stones were found to continue: all were earth-fast, like those of the undisturbed southern sector, and between monoliths Nos. 6 and 5 they reached a greater height, roughly 2 feet above the compacted layer, than elsewhere within the Inner Ring, excepting a small area nearly opposite the East Flanker; but opposite monolith No. 5 they ended abruptly, and the Inner Ring did likewise.

The Inner Ring itself consisted of a number of fairly large stones placed contiguously round the circumference of a circle of diameter 54 feet, to serve as a kerb for preventing the cairn stones from spreading outwards. Of the total number which formerly existed, 53 still remain more or less in position, whilst two lay near the Recumbent Stone (marked FF), torn out of their original positions, another lay prostrate nearly opposite monolith No. 5, whilst a fourth, situated opposite monolith No. 2, had been pulled on to one side to make room for the passage of those who robbed the cairn of its stones. Several potsherds fell into the socket of the last upon its removal (No. 175). A fifth stone lay prostrate to the south of this last one, and underneath there was a small collection of potsherds (No. 237) of Iron Age date, and quite near were two sherds of Beaker ware (Nos. 237', 236). It is perhaps curious that so much pottery should have congregated beneath this stone, and, had there been more of the Iron Age vessel, one might have been tempted to assume that here there had been a burial, since a piece of burnt flint and a few fragments of calcined bone were found along with the potsherds. A fragment of clay mould for casting metal was found nearby: apparently the metal had been bronze, since a small piece of bronze slag was found rather more than 10 feet away in a northerly direction. The biggest of the Inner Ring stones are on the southern semicircle, whilst those which remain of the northern semicircle are of a smaller nature. In this diminution of size they closely follow the scheme expressed by the gradually decreasing size of the main ring of monoliths, a typical feature of most circles of this type. The majority of the stones of the Inner Ring were set upon their sides, and they varied greatly in magnitude, some on the southern semicircle being as much as 4 feet 2 inches long, whilst others, not so long, attained a height of 2 feet 9 inches, diminishing on the northern semicircle to 2 feet 1 inch in length for the longest, and 1 foot 7 inches in height for the highest.

Between monoliths Nos. 8 and 7,¹ and extending as far as No. 6, there was an added declivity in the hillside, and the builders of the circle had taken steps to level this up. A quantity of rubble was thrown down

¹The monoliths are numbered in a clockwise direction, the West Flanker being numbered 1.

here, and then over this was spread a layer of soil, upon which rested the remaining stones of the Inner Ring (see No. 5, fig. 1). No attempt had been made to level the ground outside the Inner Ring.

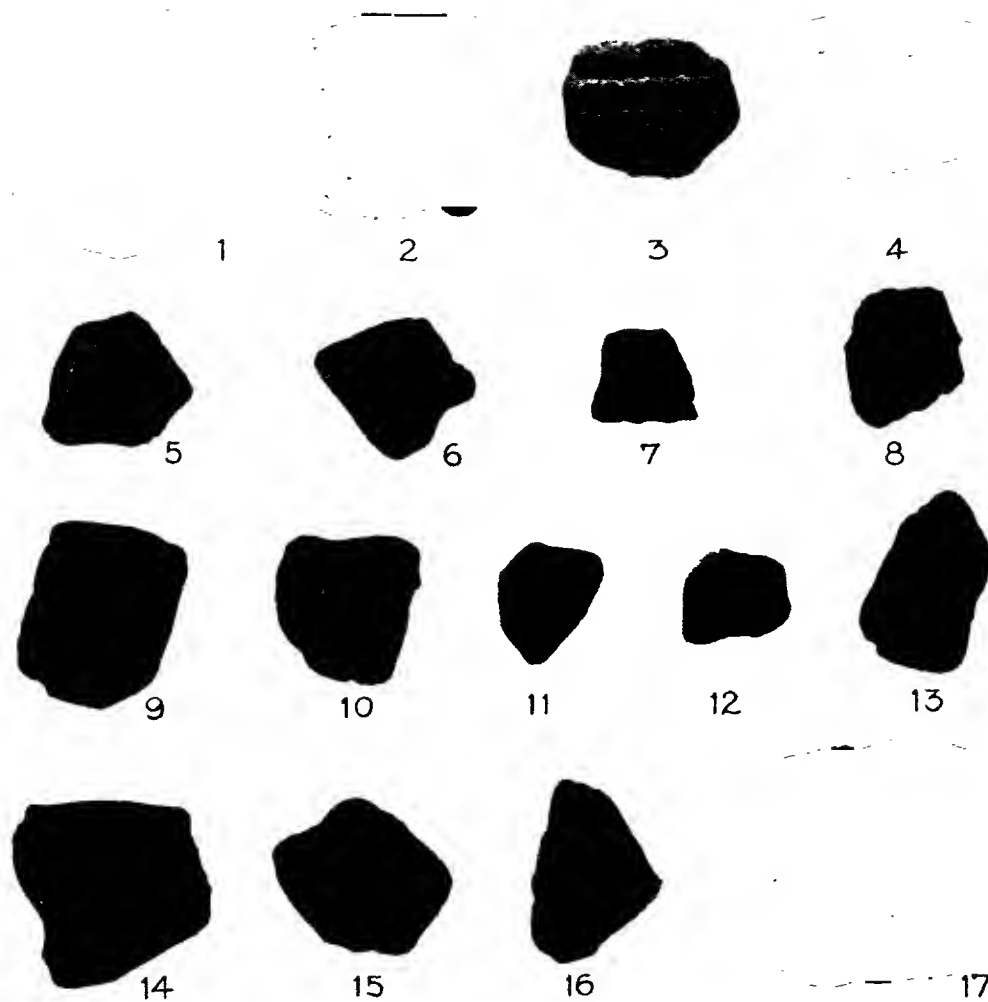


Fig. 2. Beaker Pottery. (}.)

Between monoliths Nos. 4 and 5 several dark patches were discernible against the compacted layer, and when these were cleaned out, they were found to be the fillings of very shallow sockets for some of the

missing Inner Ring stones. Probably these "sockets" had been formed solely by the weight of the stones themselves, since they were hardly ever deeper than a single inch; but they were quite definite, none the less.

The examination of the cairn did not yield much of interest, apart from one structural feature to be noted presently. Most of the stones forming the cairn were so well fixed that they had to be levered out of position: there was a marked variation in their size, some being as much as 2 feet 6 inches long and nearly 2 feet broad, while interposed here and there were areas of very much smaller stones, of about 9 inches long by 6 inches broad. The cairn had been laid upon the hard, reddish-brown compacted layer already noted, so that it must have been the original floor of the circle at the period of its erection. Throughout, the whole area examined was quite undisturbed, and nothing but a few very small potsherds were found. This examination only served to confirm the inference already drawn that the pottery discovered in the disturbed areas of the north and north-west sectors had undoubtedly got there during the removal of the cairn stones when the monument was quarried. As to where the pottery came from is a question not easily answered; but, obviously, any potsherds found in this area can hardly be claimed to serve as a sound argument in the discussion of any question of chronology.

The structural feature discovered during the examination of the cairn, and mentioned above, was a Crescent of stones beginning very nearly due south of the centre and extending in an arc northwards until interrupted by two disturbed areas. It is situated approximately midway between the Inner Ring and the edge of the Centre Pit, to be discussed later: and where it begins on the south side it consists of what might be termed a double line of stones. These suddenly expand into three lines, and then rapidly into four. Unfortunately, what would occur after this is not very clear, owing to someone within the last century having dug a pit here: but on the other side are a few remaining stones, interrupted once more by the general clearance that robbed the cairn of the majority of its stones.

These Crescent stones had all been carefully selected: they were above the average in size, and all presented an orderly appearance lacking elsewhere. Generally they were about 2 feet 3 inches long and 1 foot 6 inches wide, but their height varied greatly, although some attained 2 feet, thereby standing out against and above the cairn stones. The most remarkable feature about them was the curious fact that they were nearly all set on end, thus showing a marked contrast to the cairn stones, which presented the usual irregular appearance typical of such

structures, an aspect which is due to their having been thrown into position instead of having been hand-placed.

Like the stones of the Inner Ring, those forming the Crescent were merely laid upon the compacted floor. Each of the Crescent stones was lifted for examination: and, whereas those forming the double row from the south northwards were found to cover nothing of interest, quite a different story was revealed as soon as they expanded into three rows, and then into four. The first stone of the third row was situated on the edge of a small pit cut into the subsoil, and measuring 1 foot 10 inches long by 1 foot 4 inches broad and 6 inches deep. It was full of light-coloured soil, rather like disturbed subsoil, which, on being cleaned away, yielded a single fragment of calcined bone, a single potsherd, and a single piece of charcoal.

Of more significant interest was the evidence discovered by the lifting of the four rows of Crescent stones. Underneath, instead of the hard, compacted floor, was a black, greasy deposit which adhered to some extent to the stones themselves. This seems to indicate that the stones were placed directly thereon soon after the formation of the black deposit. The black deposit itself consisted of fine charcoal dust, and intermingled with it were numerous fragments of calcined bone, all rather badly crushed. The deposit was scraped away, disclosing underneath a bright red, hard-baked floor, which was merely the original compacted layer subjected to much heat. The area of this burning, which was of the extent of 9 feet long by 6 feet broad, did not extend outside the area covered by the four rows of Crescent stones: and by a stroke of good fortune, the treasure-hunters had dug through the centre of the fireplace only, leaving its edges intact and well defined. The extent to which the floor had been burnt and the presence of the calcined bone draws us to conclude that here had been placed the funeral pyre for cremating the remains of the dead. Moreover, the body, or bodies, had obviously been cremated before the erection of the cairn, and the full significance of this will be realised later when we endeavour to arrive at conclusions as to the period of this happening. It is also obvious that the erection of the cairn took place immediately following the cremation, since the freshness and the adhesiveness of the charcoal dust to the Crescent stones could imply nothing less conclusive.

THE CENTRE PIT.

The limits of the Centre Pit were defined in no uncertain manner. The pit had been formed by scraping away the hard, compacted floor, which here was approximately 3 inches deep, to the subsoil immediately

below. (Everywhere within the circle the subsoil was always discovered at approximately this depth below the level of the compacted floor.) Within the pit there was a number of artificial hollows scooped out of the subsoil. That marked A on the Plan, Pl. II., was an irregular oval depression about 2 inches deep and 2 feet 10 inches long and 1 foot 5 inches broad: that marked B was 2 feet 5 inches long and 1 foot 10 inches broad and of the same depth: C, near the centre, was 4 inches deep, and contained a fragment of beaker rim (No. 202, fig. 2, No. 14): D was a long pit nearly 6 feet long and 2 feet 5 inches broad, 5 inches deep at its

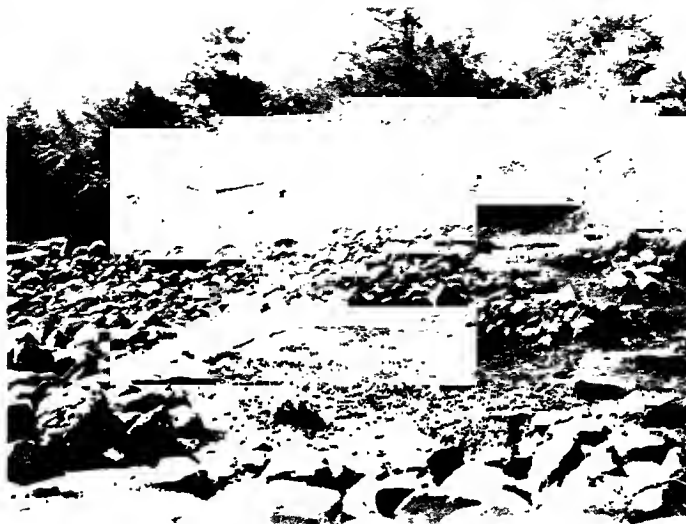


Fig. 3. Centre Ring Cairn and Pit.

west end, but becoming more and more shallow towards the east: E, the biggest and most deliberate of these depressions, possessed well-cut sides, and had been sunk to a total depth of 8 inches, the entire depth of subsoil here: its base, therefore, was formed of the natural bed-rock, and its length was 5 feet and its breadth 2 feet 7 inches: F, whose extent on one side was determined by the edge of the Centre Pit, was hardly less sharply defined, and measured 5 feet 1 inch long by 1 foot 10 inches broad: G and H were two shallow depressions, whilst J, K, L, M were small circular ones of no great depth. A small quantity of Iron Age ware was found upon the subsoil, several sherds including a rim at No. 204, a rim at No. 157, and another at No. 205.

On the south-west side of the pit will be observed a line of stones situated within the edge to a distance of as much as a foot. These stones,

now earth-fast, were all lying immediately upon the subsoil, and their aspect and position made it clear that they had formerly belonged to the cairn, and had slipped down from above. As will be seen from fig. 3, the general level of the cairn stones here is about 9 inches above that of the pit floor: and the space left by the fallen stones can readily be seen on the Plan, Pl. II. A rim (No. 218) of native manufacture, but probably showing Roman influence, was found upon the compacted floor at the place from which these stones had fallen. This fall into the pit is valuable from the chronological point of view. The pit itself was full of dark earth, darker than the superincumbent accumulation of soils cleared away in other parts of the cairn; but the darkest of this earth, in which there was a considerable charcoal content, was found near the bottom. This black earth was never more than 2 inches deep, and at this level the majority of the potsherds marked upon the Plan, Pl. II., were found, in addition to which there were 5 lbs. of calcined (human) bone at the same level, usually occurring in patches throughout the area, except on the south-west and east sides.¹ At the same level was found a fireplace,² indicated by an unusual purple colour and hardening of the black soil, and round about it charcoal was particularly abundant. In addition, it will be observed that the majority of the domestic pottery was found in the vicinity of this fireplace, so that one is tempted to wonder whether this could indicate that the site had been used for domestic purposes, or whether we had not here the remains of a funeral feast. Where sherds of the same pot were found in close proximity to one another, they always gave the impression of having got there through the vessel having been dashed to the ground. But whether the custom was purely funeral or domestic in purpose or otherwise, the pit must have been continually open or re-opened during perhaps three centuries or longer, since the pottery found covered all types from the early Iron Age to the Roman period.

Now, since the pottery, the calcined bone, and the fireplace were all discovered at approximately the same level, we conclude that the pit must have been filled in to this depth (2-3 inches) by people possessing an Iron Age culture. Obviously, the scooped-out hollows in the subsoil were of no interest, and perhaps even a nuisance, so that they were completely covered up; and the soil which was thrown in for this purpose also partly covered the fall of cairn stones we have noted above. This

¹ The two vessels, Nos. 195 and 159 (fig. 10, Nos. 1 and 2) were definitely associated with calcined bone, which seemed to be concentrated in their vicinity; but No. 171 (fig. 10, No. 4), on the other hand, was unassociated with human remains. The first two vessels can therefore be regarded as sepulchral urns.

² The area covered by this fireplace is indicated on the Plan, Pl. II., by the dotted line in the east corner of the pit.

occurrence seems to imply that the Iron Age folk cleaned out the pit beforehand, presuming it to have contained something, and in doing so the stones fell in. In any case, the fall of stone is a certain sign of secondary disturbance, since nothing but the re-opening of the pit after the cairn had been placed in position could explain their presence. In addition, it would seem that the cairn must have been partly removed when the Iron Age ware was being thrown into the pit, and perhaps even to the level at which it was found on the southern sector, seeing that, subsequent to the deposition of ware of the Roman period, someone filled up the Centre Pit with earth, and then replaced over that a single layer of stones in such a way as to make them harmonise with the surrounding cairn.

This is really an extraordinary state of affairs. The grouping of the domestic pottery round the fireplace, and the smallness of the fireplace itself (it measured only 3 feet 6 inches by 2 feet 6 inches), can indicate nothing but the cooking of victuals in the pit, and to have done this amongst the scattered ashes of the dead can hardly be said to show any deep regard for the memory of the departed. The length of the period over which all this was happening makes one inclined to regard the whole affair as having some part in the purely domestic life of the people; and perhaps a reversal of feeling caused someone later to fill in the pit to stave this desecration.

RECUMBENT STONE, AND WEST AND EAST FLANKERS.

We have seen that the Inner Ring at the west end of the Recumbent Stone had been considerably disturbed, two stones lying against the latter, and two or three others being amissing. A glance at the Plan, Pl. I., near the East Flanker will show that the original intention of the builders had been to bring the Inner Ring round in such a way as to make it adjoin the monolith. Two stones connected the Inner Ring with the Recumbent Stone itself: but, in order to keep the cairn away from the latter, a sort of "fender" was built on the north side. In thus isolating the Recumbent Stone from the main body of the cairn, there seems to be a diversity of purpose: for the former has been included within the Inner Ring in addition to the main ring of monoliths. Whether the same arrangement obtained at the west end is uncertain, owing to the amount of disturbance that has taken place, but it is extremely likely.

Examination within the so-called "fender" yielded interesting results. At the west end there had been considerable disturbance, and

this extended very nearly to half the length of the Recumbent Stone. Beyond, and as far as the east end, conditions were quite different, for here were the remains of carefully laid paving. Moreover, the stones forming the "fender" were placed upon this paving, which was thus used as a foundation, so that the paving must have been laid prior to the building of the cairn. The paving itself was not laid upon the compacted floor, as had been the case with all the previous structural features so far noted: instead, approximately one foot of earth had been thrown down, and the paving was then laid upon that. Also, the earth itself had not been laid upon the compacted layer, as might have been supposed. The latter did not exist here; but instead there was a large hollow, which seems to have been scooped out, well into the subsoil, to receive the Recumbent Stone.¹ Just within the hollow, and at 7 feet below datum, an ornamented rim of very thick beaker ware (fig. 2, No. 1) was found, and this was buried under the earth which had been thrown down to form a foundation for the paving; and the laying of the paving preceded the building of the cairn. A sherd of coarse ware (No. 115) and a rim (No. 116), both of Iron Age date, were found upon the paving at 5 feet 11 inches below datum.

A definite estimate of the total height of the larger portion of the Recumbent Stone was unobtainable, owing to its being in direct contact with the subsoil, but that height is about 7 feet 2 inches, and the extreme length is 11 feet 2 inches. All indications pointed to the base being "keeled"; and this keel was seen to be rising towards the east end.

On the southern side of the Recumbent Stone there were irregular patches of stones which were most numerous round the West Flanker, and from here they tailed off in a northerly direction, ceasing altogether about midway between the West Flanker and monolith No. 2 (see fig. 4). There were very few towards the East Flanker, but it was obvious that a fair amount of robbing had taken place here. The purpose of these stones is not very apparent, and their limits are not within the possibility of determination. They could hardly be claimed to form a cairn, owing to the fact that there was but a single layer; and from the lack of similitude of order, they can hardly be claimed to be paving-stones. The stones themselves rested upon a 10-inch deep layer of moderately hard soil, which might either have been an accumulation upon the natural subsoil, or have been placed there deliberately, perhaps in much the same manner, and at the same period, as that under the paving on the north side. This

¹ A section through this hollow is shown in fig. 5. A similar hollow was noted at Old Keig (*Proc. Soc. Ant. Scot.*, vol. lxxiii, p. 375).

deposit yielded several potsherds: for the most part they belonged to coarse ware of early type in the Iron Age (Nos. 224, 225, 226, 227, at 6 feet 5 inches, 6 feet 7 inches, 6 feet 6 inches, and 6 feet 4 inches below datum), and a flint scraper (No. 223) was found almost upon the subsoil at 6 feet 10 inches below datum, whilst part of the base of a beaker (fig. 2, No. 17) was found at 6 feet 4 inches below datum. It would thus seem apparent that there must have been a good deal of disturbance in this area.



Fig. 4. Stony Area on S. and W. of Recumbent Stone.

The detached part of the Recumbent Stone was found to be standing in a most precarious manner, depending for support upon a few stones of the above stony area. It had dropped on to these from a higher level, a fact confirmed by some of the ridges in the cleft. There was a particularly prominent ridge at the west end which had a corresponding negative ridge on the opposite face of the larger mass, and the difference in levels amounted to nearly a foot. This difference was much less at the east end. There must, therefore, have been a considerable overhang on the south side, and it is possible that nothing more than its own weight and the presence of a "dry" caused the two halves to fall asunder. There was certainly no indication of the happening being deliberate. The maximum height of the detached portion is 6 feet, and it is probable that the halves abut at the base. Within the cleft, due to the confined space, it was only possible to effect clearance to

a depth of 5 feet 9 inches, at which level one half of a flint-scraper was found.

In regard to the Flankers, a curious exception to rule is to be noted here. Attention has been drawn, in a previous paper,¹ to the fact that flankers are usually self-supporting, with their long, or straight, sides adjacent to the Recumbent Stone, conditions which apply to most stone circles possessing large monoliths. At Loanhead, however, these conditions are reversed: for, not only are the short sides or "curves" adjacent to the Recumbent Stone, but the flankers depend entirely on the latter for support. This was obvious from the West Flanker, and the position of the shallow crater for the East Flanker proved beyond doubt that

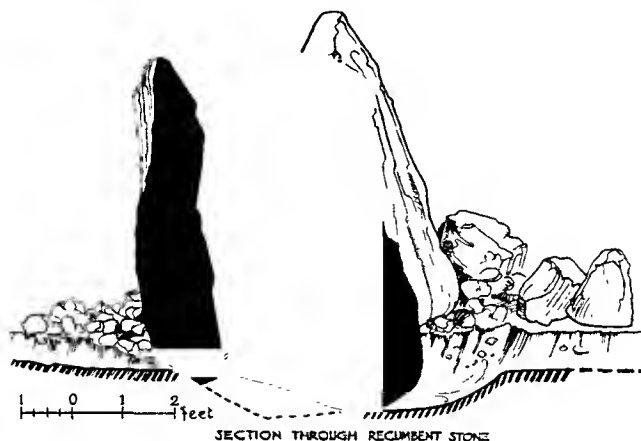


Fig. 5. Section through Recumbent Stone.

it had stood under like conditions. This shallow crater, if such it might be called, was situated near the last stone of the Inner Ring: and since it was only a mere 3 inches deep, it is probable that it was caused by the stone sinking into the subsoil under its own weight upon its triangular base. Two notable rims of Iron Age ware and a beaker sherd (fig. 2, No. 9) were found here. The rims are unique: one, quite plain and of simple type, expands into a lug three-quarters of an inch below the lip, whilst the other is of angular section (Nos. 181, 219).²

The apices of both flankers have been removed—that of the East Flanker in comparatively modern times, whilst the detached apex of the West Flanker is the subject of later discussion.

¹ H. E. Kilbride-Jones, "Stone Circles: A New Theory of the Erection of the Monoliths," *Proc. Soc. Ant. Scot.*, vol. lxxviii, pp. 81-96.

² See fig. 14, Nos. 2 and 12.

MINOR CAIRNS AND CRATERS OF PROSTRATE MONOLITHS.

The term, Minor Cairn, is being applied by the author to those stony areas situated around the monoliths of the main circle. Commencing in a clockwise direction, they take their numbers from those of the monoliths they surround, the West Flanker being monolith No. 1.

Cairn No. 2 was very fragmentary. Those stones remaining were well set, and apparently *in situ*: they rested upon 8 inches of well-packed earth above subsoil level. Three very small sherds were found amongst the stones, but nothing of further import, and no peculiarities of structure were noted.

Cairn No. 3 had also been subjected to a certain amount of disturbance. In the middle of the cairn, on the east side of the monolith, was a large stone carefully laid, measuring 2 feet 1 inch by 1 foot 8 inches, and resting upon its face on 10 inches of soil, the noted depth above subsoil. This stone was surrounded by two or more layers of small stones, except to the south, where there was another moderately large stone, measuring 1 foot 10 inches by 1 foot 3 inches. On the northern side there was a number of fairly large stones placed as though to form a kerb, and they rested upon the compacted layer noted elsewhere. It therefore seems conclusive that the soil found in the middle of the cairn must have been deliberately placed there by the builders. A pot¹ was found buried under the east side, just within the limits of the cairn, to judge from the position of the shallow socket of an Inner Ring stone discovered near here. Like the vessels of the centre pit, this pot seems to have been dashed upon the ground, or it may have been crushed by the weight of the cairn stones. It was no doubt placed there by lifting the edge of the cairn, and the clumsy replacement of the stones would cause the destruction. This pot was in nearly 80 pieces, and, unfortunately, so badly broken that very few can be found to join together. Incidentally, it rested upon subsoil. On the west side of the cairn the crater for the monolith was found. On being cleaned out its depth was noted to be 17 inches, and in shape it was of the same triangular form as the base of the monolith.² Round the mouth of the crater were many stones, well forced into the soil: these are undoubtedly original packing stones. A rim of beaker ware (fig. 2, No. 4) was discovered on the north side of the crater, in an area that once must have been covered by the cairn, all trace of which is now absent here.

Cairn No. 4 was in rather a ruinous condition, and no very definite indication remains of its original extent. In the middle was the crater

¹ See fig. 10, No. 5.

² See fig. 8.

for the prostrate monolith, surrounded like the previous one (No. 3) by moderately small stones, many of which were earth-fast and well embedded in the soil—undoubtedly packing stones. This crater was the most perfect and undamaged of all those found, and was 14 inches deep from the level of the packing stones, and of triangular form. Apparently the depth of every crater in this circle was governed by the presence of bed-rock. Nearly in front of the centre of the crater on the eastern side was a single large stone, measuring 1 foot 7 inches by 1 foot 6 inches, underneath which was a depth of 11 inches of soil, well packed and hard. Near this large stone, and contained in the soil, was the rim No. 239. The cairn here had been robbed of most of its stones.

The western half of the cairn must have been of considerably larger dimensions than the eastern half, to judge from its scattered remains. Whereas the empty pot found in Cairn No. 3 had apparently been symbolic of interment only, here was found definite evidence of burial, for the pot discovered on the outer limits on the north-west side had contained both calcined bone and charcoal, the latter mostly in fine powder form, darkening the surrounding earth, and the former represented by a few fragments only. That there was no more was probably due to disturbance, which had been considerable here. What remained of the pot¹ was scattered in almost equal quantities, roughly half the sherds being found at No. 231, which, from the presence of the calcined bone and the blackened earth, had undoubtedly been its original location, and the remainder at No. 233. For the deposition of this pot all earth had been scraped away, and it rested upon subsoil along with a sherd of beaker ware (fig. 2, No. 3). A small fragment of rim of a thick blackish-buff coloured ware was found at No. 232. In contrast to the half within the circle, the stones of this part of the cairn rested upon the compacted layer, here sometimes less than 2 inches thick above subsoil.

Of Cairns Nos. 5 and 6 little remains. Only a few stones situated between the Inner Ring and the prostrate monolith remain of No. 5, together with a small group on the north side. Cairn No. 6 was also represented by a few scattered stones lying between the Inner Ring and the prostrate monolith, and by a few on the north-east side. In both cases no relics were recovered.

The crater for monolith No. 5 was of fairly large dimensions, and somewhat disturbed, but on the southern side many of the original packing stones remained. It was 16 inches deep from the level of these stones, and cut down to bed-rock. The crater for monolith No. 6 was of peculiar form, and suited to the pointed base of the stone. It was

¹ See fig. 10, No. 3.

14 inches deep, and there were packing stones on all sides and several stones on the bottom, obviously placed there to fill up a crater that had been made too large.

Cairn No. 7 had suffered a certain amount of disturbance, notably near the place whence the Inner Ring stones had been removed, and also on the eastern side of the monolith: but what remained of it seemed to be *in situ*. Near the centre of the western part of the cairn was a single stone measuring 1 foot 5 inches by 1 foot 8 inches. It was 11 inches removed from the face of the monolith, and rested upon soil $10\frac{1}{2}$ inches deep. For the most part, the cairn was composed of small stones, with a few of larger dimensions on the south side, possibly the remains of its kerb. As noted elsewhere, the soil increased in depth towards the centre: it consisted firstly of a layer of yellowish-red coloured soil, 7 inches deep above subsoil, and thereafter it became reddish-black, and of a sticky nature. Several potsherds were found, the rims being all of one type (Nos. 241, 242, 243), and they were almost upon subsoil. Along with them was a single sherd of beaker ware (fig. 2, No. 13). It would seem, from these fragmentary remains, that the cairn had been opened more than once. On the eastern side the cairn had been laid upon a moderately steep decline, the same decline that had occasioned the attempt at levelling within the circle, already noted in connection with the Inner Ring. Here, however, the builders were content with conditions as they found them, so that there is a drop of nearly 2 feet between the level of the upper part of the cairn and that of the lower limits. The cairn itself here consisted mostly of fairly small stones, being little more than a single layer deep, with about an inch of soil between it and the subsoil. Amongst these stones, but not beneath them, was a single rim (No. 245) and a few fragmentary sherds.

The most perfect of the Minor Cairns was No. 8. That half within the main circle was contained within a kerb of moderately large stones, placed not quite contiguously, and carefully laid upon the compacted layer. As usual, there was a moderately large stone near the centre, and, on this occasion, abutting the monolith. The stone measured 1 foot 11 inches by 1 foot, and rested upon 11 inches of soil: the soil was deepest here, and became more and more shallow towards the kerb. Although apparently unmolested, this cairn did not yield any pottery at all. On the eastern side, without the circle, it had been partly robbed. One or two fragments of rather thick pottery were found upon the removal of the cairn stones, but nothing that could be identified with certainty. At the eastern end a number of large stones had been placed in practically a straight line between the two points indicated by arrows on the Plan.

Pl. I. The largest stone measured 2 feet 6 inches by 1 foot 9 inches, and none was less than a foot in height. The impression conveyed by their arrangement was that their original function had been to provide a sort of partition or division between the cairn just discussed and another cairn-like structure on the eastern side. All these stones of the "dividing line" had been carefully laid, much in the manner of the Crescent stones of the central Ring Cairn. The stones on the eastern side of this line, however, gave every appearance of being a continuation of Cairn No. 8, and they turned slightly in a southerly direction.¹ They formed barely a double layer, upon soil 3-4 inches deep, and after narrowing and diminishing in numbers, they joined a setting of flat stones of a fair size and well fitted together. When raised for examination these well-set, larger stones were found to be resting almost immediately upon the yellow subsoil. The largest measured 1 foot 10 inches by 1 foot 4 inches, and all were fairly smooth and flat. Underneath the largest stone was a cist which was entirely filled up. It was finely made, though somewhat irregular in shape, and measured in greatest internal length 1 foot 10 inches and in breadth 1 foot 0½ inch. It was composed of four slabs set

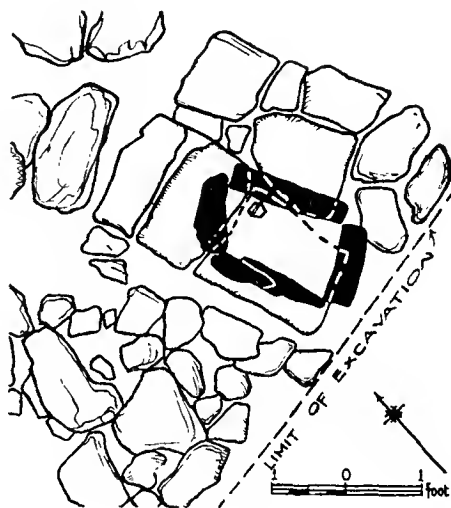


Fig. 6. Details of Cist.

on end, and corner to corner, so that in length they correspond with the internal measurements of the cist. The slab forming the west side decreased in height at one end, and a small stone, 11 inches long by 3½ inches broad, had been placed upon it here to level it up. The top of the cist was level with the surface of the subsoil, and it was 8 inches deep, this being the entire depth of subsoil here: the floor was therefore of natural bed-rock.

The cist was full of calcined bone and black earth, the greatest quantity of the former being at the northern end, where it reached nearly to the top. The bone must have been piled here, but had spread out from this centre to cover the whole floor, although in decreasing quantities towards the south end. Underneath the calcined bone at the

¹ How far they extend in a southerly direction is unknown, since the time at my disposal this year did not permit of its complete examination.

northern end, and only an inch removed from the east wall of the cist and 4 inches from the north wall, was an Incense Cup (fig. 7) which lay upon its side with its mouth facing due north. It had undoubtedly been placed in the cist first, and then the calcined bone had been piled upon it. The Incense Cup was very little damaged, although it was in a somewhat friable condition. It is made of rather coarse paste, containing a great deal of large grit: red in colour, it is decorated with parallel, horizontal lines of cord ornament, rather closely grouped at the



Fig. 7. Incense Cup Urn. (1.)

mouth, but leaving a fairly wide space at the shoulder. The cup measures $2\frac{1}{4}$ inches in diameter and $1\frac{7}{8}$ inch in height.

The majority of the kerb stones of Cairn No. 9 were amissing, but otherwise it seemed intact. Much deeper than the previous examples, there were no less than four to five layers of stones, mostly of moderately small size, with the inclusion of a few larger ones. In the middle, and abutting the monolith on the north side, was a boulder measuring 1 foot 4 inches by 1 foot 2 inches and over a foot in thickness, which might be assumed to represent the usual well-placed stone found in a central position in the preceding cairns. There was less earth, too: here it was only about 7 inches deep. On the west side was found the remains of a rather crude, roughly made pot (No. 176).¹ Of Iron Age date, it was considerably smashed, and was represented by a large number of

¹ See fig. 10, No. 6.

very small sherds, so that little restoration has been possible. It was probably scattered by the cairn stones being roughly heaped upon it, after they had been lifted at the edge to admit of its being placed underneath. Three sherds, including part of the base, were found upon the compacted layer just outside the cairn (Nos. 177, 178, 179). On the south side of the monolith much of the cairn was missing. Those stones remaining were upon soil 6 inches deep.

Adjoining the cairn on the south side was a different form of structure, in that it was composed of larger stones, generally of a rough character, though fairly carefully laid down. Some of them were as much as 2 feet in length and over 1 foot in breadth, and they existed in marked contrast to the cairn stones. The area which they covered, which measures 11 feet 6 inches by 10 feet 3 inches, is not defined in any way by a kerb, and its rather irregular outline suggests that interference may have taken place here at some period. This paving, if such it might be called, consisted of a single layer of stones laid upon hard, compacted soil, the latter being about 3 inches deep (from subsoil level). Upon this paving, on the northern side, two sherds of beaker ware (No. 234, fig. 2, Nos. 5, 6) were discovered immediately upon the stones.

Studied collectively the Minor Cairns appear to have been of elliptical form, with their axes roughly conjoining in the centre of the main circle. The inner limits of the ellipse are determined by the Inner Ring, and by the kerb of stones seen to surround that part of the cairn situated within the main circle of monoliths; but the outer limits, without the main circle, seem to be undefined. The monolith itself is always situated in the middle of the cairn. In the centre of the inner half, between the Inner Ring and the main circle, is situated a single large stone, sometimes abutting the monolith, and always placed upon a deposit of earth, deepest here, and gradually diminishing in depth towards the kerb. This central stone was never found to cover anything, and is probably purely symbolical in purpose. Whereas that part of the cairn within the main ring contained a deposit of earth, that without contained none: when the former part has covered a pot, the vessel has not only presumably been empty when deposited, but it has been roughly buried by raising an edge of the cairn, throwing the pot in, and then replacing the stones. This implies that the cairn was already in existence when the Iron Age pot was buried, and that the cairns were actually re-opened for the deposition of this ware is suggested by the presence of Iron Age rims side by side with a sherd of beaker ware in the case of Cairn No. 7.¹

¹ This interpretation was first suggested to me by Mr A. O. Curle, whom I wish to thank for advice in this connection.

The only burials occurred outside the main ring in the Cist and in Cairn No. 4, and in this latter an Iron Age pot was again associated with a sherd of beaker ware. In the case of Cairn No. 3 a rim of beaker ware was found where the cairn, long since removed, should have been situated. Unfortunately, nothing is conclusive enough to prove whether the cairns were built at the same time as the circle itself, or whether they formed a later addition to the general plan of the monument. Be it said, however, that the evidence yielded by the Minor Cairns is somewhat reminiscent of that yielded by the central Ring Cairn, and just as open to speculation.

THE MONOLITHS.

A few remarks have already been made in connection with the West and East Flankers, and in particular about the Recumbent Stone. It need only be added that the last seemed to be untrimmed; but, judging from its face on the south side, it may have been split off at a quarry face.

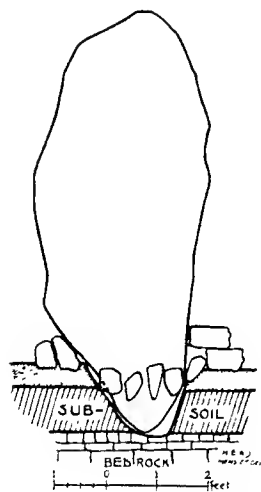


Fig. 8. Section through Monolith and Crater No. 3.

The West and East Flankers agree in shape with the principles set forth in a recent paper.¹ Although the West Flanker was not disturbed to its base, from what could be seen it was more or less of the same shape as the prostrate East Flanker, although its form might have been partly natural. Attention has already been drawn to the fact that both flankers relied upon the Recumbent Stone for support, and this might be thought to imply that they were erected subsequent to the placing in position of the latter. Were this so, their erection must have been an undertaking of extraordinary difficulty. The shape of the bases, however, makes it clear that they were erected according to principle—that is, from the position now occupied

by the Recumbent Stone. By some means they must have been held in an upright position whilst the Recumbent Stone was being moved into place, and then they were allowed to slip back slightly until they rested against it. This is an interesting variation of the usual practice.

The monoliths at Loanhead have not been so carefully chosen as those which constitute some of the Aberdeenshire stone circles; neither

¹ H. E. Kilbride-Jones, "Stone Circles: A New Theory of the Erection of the Monoliths," *Proc. Soc. Ant. Scot.*, vol. lxxviii, pp. 83-96.

has a great deal of time been devoted to their correct shaping. All, however, agree in general shape with the principles already set forth.¹ Those of the prostrate monoliths to which most attention has been devoted to the shaping of the base are Nos. 3 and 5: whilst the most unfortunate example is No. 6, with its pointed base, giving a small degree of security. The first two monoliths (Nos. 3 and 5) are examples of well-balanced design: whilst No. 6 is, naturally, top-heavy. There can be little doubt that, with their well-balanced outline and breadth and length of base, Nos. 3 and 5 were deliberately pulled down, since such stones, when once they have attained a vertical position, will show little inclination to fall without the help of extraneous forces.

Apart from No. 6, the prostrate monoliths have received a fair amount of attention from the stone-mason. Nos. 3, 4, and 5 have all been carefully squared, and the first and last provided with the traditional pointed apex and triangular base: whilst No. 4 still possesses the remains of the triangular base, although the top half of the monolith has been broken off and carried away, and that apparently not very long ago. The outline of No. 6 suggests that its shape was accidental. There are no indications of tooling, but most of the monoliths possess fairly even surfaces from which protuberances have been knocked off. The most irregular monoliths seemed to be those which still remained standing. No. 2 is a peculiarly shaped pillar, with rough, uneven surfaces. In contrast, No. 7 has two exceedingly smooth and flat faces, both front and back: surfaces which are, in addition, almost parallel to one another. No. 8 is a squat monolith of irregular form, and more than normal width: whilst No. 9 is a top-heavy mass of great width and thickness, and bearing upon it five cup-marks. Considering its slight tilt towards the interior, and the apparent narrowness of its base, it is rather remarkable



Fig. 9. Cup-marks on Stone No. 9.

¹ *Ibid.*, p. 88.

that it has remained standing for so long. The five cup-marks¹ are placed more or less vertically, one above the other, and upon a face the right angle to the plane of which would be almost due north. They are small cup-marks, varying from about $1\frac{1}{2}$ – $1\frac{3}{4}$ inch in diameter.

One interesting fact is manifest: the sockets, or craters, of the prostrate monoliths provided indubitable proof that the stones were all erected from the same side. Thus, if we stand in the middle of the circle and view each monolith from that point, we find that they were all erected from the right. The same conditions probably apply to those monoliths still erect, the only possible exception being the West Flanker.

The heights of the different monoliths above ground-level are as follows:—

Monolith No.		Height.		Total Length.		Greatest Thickness.	
		ft.	in.	ft.	in.	ft.	in.
1	(West Flanker)	7	2	—	—	2	10
2		6	2	—	—	2	6
3		6	10	8	3	2	0
4	(remains of)	2	8	3	10	2	5
5		6	6	7	11	2	6
6		5	$2\frac{1}{2}$	6	$4\frac{1}{2}$	2	5
7		4	7	—	—	1	5
8		4	6	—	—	2	7
9		6	9	—	—	2	7
10	(East Flanker)	6	7	6	11	2	5
	(remains of)						

Although from the above figures there would appear to be no regular decrease in height of the monoliths from south to north, the declivity of the hill assists and completes the illusion, so that the effect produced on the mind with regard to Nos. 1 to 6 is of a gradual decrease in height. This effect is rather ruined, however, by the smallness of Nos. 7 and 8, and the contrast between them and the massive monolith No. 9.

Whereas the variation in the diameter of the circle is small, the mean diameter being 64 feet, the spacing of the monoliths upon the circumference of the circle is most irregular, varying between 12 feet 9 inches

¹ In a paper, "Cup-marks on the Stone Circles of Aberdeenshire and Banffshire" (*Proc. Soc. Ant. Scot.*, vol. lli, p. 86), the late Mr James Ritchie notes the existence of these cup-marks, although Coles neglected them. However, Mr Ritchie counts six, making the rather undefined mark above the top cup-mark to be the sixth. This appears to be nothing but a natural hollow in the stone, lacks any well-defined edge, and is of insignificant depth.

for the distance between Nos. 6 and 7 to 20 feet 9 inches between Nos. 4 and 5. It is the monoliths on the northern arc of the circumference which show such irregular spacing. The distances between pairs are as follows:—

Nos. 1 to 2, 17 feet 10 inches: 2 to 3, 19 feet; 3 to 4, 16 feet 6 inches; 4 to 5, 20 feet 9 inches: 5 to 6, 16 feet 6 inches: 6 to 7, 12 feet 9 inches; 7 to 8, 15 feet 9 inches: 8 to 9, 17 feet 6 inches; 9 to 10, 17 feet 9 inches.

THE SECONDARY FLOOR.

At some period, perhaps subsequent to the departure of the Romans from the North-East (taking into consideration the presence of rim No. 218 in the Centre Pit), the monument fell into ruin. Upon all the structure that we have noted before was a deposit of earth, which was over 2 feet deep on the north-east side and 1 foot to 1 foot 6 inches in depth on the south side: it was moderately well packed, as though it had remained undisturbed for some considerable time, excepting the north and north-west sectors, where subsequent disturbance was observed. The top of this deposit was characterised by a hard crust, which was a light brick-red colour when newly exposed. It was so hard that it could be struck with the side of a trowel, when little impression could be made upon it; but three or four hard scrapings were sufficient to break through it. In the opinion of Dr W. G. Ogg of the Macaulay Institute for Soil Research, Aberdeen, the brick-red colour of this crust was due to the deposition of iron salts, always present in the soils of this neighbourhood: salts which were washed down to this level from above (and there was loam 9 inches deep upon this crust) by the percolation of rain-water, and, finding passage through the crust impossible, had accumulated upon it. But for the presence of this crust, the iron salts would have been washed to a deeper level. Actually, the colour faded within three or four days.

No floor was apparent in the north and north-west sectors, so that the disturbance noted previously in connection with the central Ring Cairn must have taken place after the formation of this secondary floor—probably in early Mediæval times. Elsewhere, the secondary floor was found throughout the whole circle, and is represented by the Plan, Pl. III. In the eastern and southern sectors only the tops of the cairn stones were showing through the floor, whilst the Inner Ring stones were not entirely visible. Everywhere outside the main ring the secondary floor was found, even to the utmost extent of this year's excavation.

Upon the hard crust 127 potsherds were found, and of these only three were found at a higher level. The majority of the sherds were small and much rolled: they were as liberally scattered outside the circle as within it, and some had been half-trodden into the floor. Within the cleft of the Recumbent Stone, on a level comparable with that of the floor, a single potsherd was found. On the south side of the Recumbent Stone a large number of potsherds were discovered, and these were still being found in numbers at the limit of excavation. All the pottery was of native manufacture and hand-made, and the collection included fifteen rims. Included amongst the pottery are the sherds from the disturbed area in the north and north-west sectors, since, although they are valueless for purposes of dating, most were found in the disturbed earth when searching for the floor.

Apart from the pottery, a single object of lignite was discovered upon the floor in the south sector, whilst two flint scrapers, roughly fashioned of poor quality flint, were found partially embedded in the crust on the east side, outside the Inner Ring. The lignite object is of curious form, and of uncertain use: it has parallel, well-squared sides, exactly half an inch apart, whilst its length is exactly $1\frac{1}{2}$ inch. One end is smoothed and rounded, whilst the other is worn on both sides to a thin edge.

Of the five prostrate monoliths, Nos. 3 and 5 were resting immediately upon the secondary floor, and No. 5 had sunk to a depth of 2 inches under its own weight. The top portion of the West Flanker, which was lying outside the circle on the south side, was also found to be immediately upon the floor.

It will thus be seen that the secondary floor must have been formed during a period of complete disregard for the monument, and it virtually covers the wreckage of the structure.

Mention has already been made of a dyke seen to be closely associated with the monument on the north-east circumference of the circle. This dyke, which is entirely of earth, is probably of mediæval date, and is shown upon the Plan, Pl. III. Two sections were cut through it, one being marked "Trench," and the other was beside monolith No. 6. The trench yielded nothing but negative evidence: the dyke had spread out considerably on either side as it sank, and it is now less than a foot in height. Throughout this depth numerous very small potsherds, similar to those of the secondary floor, and much rolled, were found, so that it seems obvious that the dyke must have been constructed from surface scrapings from its immediate neighbourhood. The section by monolith No. 6 showed that the dyke here was only 10 inches deep and was

composed of loose loam, and the prostrate monolith (No. 6) lay upon it, so that it had fallen subsequent to its formation.

This mediæval dyke provided one more proof of the antiquity of the destruction of the monument. We observe from the Plan, Pl. III., that it completely overlay the Cist and the Minor Cairns Nos. 8 and 7, and it was still 10 inches deep near monolith No. 6: yet cairn No. 6 was virtually missing, except for a few scattered stones to testify to its former existence. This seems to indicate that stone circles ceased to possess any national import at an earlier period than had been thought probable.

CONCLUSIONS.

With so much that is inconclusive, it is difficult to hazard an opinion in regard to the date of the construction of the monument; and, considering the lack of corroborative evidence from elsewhere, it is best to reserve any serious attempt until a later occasion.

The finding of the Incense Cup has established the date of the structure in which it was found; and this structure forms a feature not encountered elsewhere, seeming as it does to be a later addition to the Minor Cairn No. 8, if we may place any significance in the so-called "dividing line" of stones. It is extremely likely that the Minor Cairn would have been in existence first, since it can hardly be maintained that the builders would design a stone circle to correspond with the existence of another structure having no connection with it; and, robbed of the Minor Cairn, the Cist and its covering structure cease to serve any purpose, and isolated cists, unless marked by the presence of a cairn, are usually hidden out of sight. We may conclude, therefore, from the necessity of orientating such a monument before its construction, that both the circle itself and the Minor Cairns were there first; and the Incense Cup indicates a middle Bronze Age addition of the Cist and its covering structure.

The presence of the beaker sherds in the Centre Pit and in the Minor Cairns gives a hint of even an earlier date, especially for the former, as we know that it was cleaned out by later comers possessing an Iron Age culture. Apart from this, the centre Ring Cairn itself possesses features which establish it as belonging to a date in the Bronze Age, and of these the Crescent is the most vital. Such a feature is not of very common occurrence; but it has been found in a round cairn at Collessie, Fife,¹ wherein were found two beakers and a gold-mounted bronze dagger; it was found in the round cairn at Carnassarie, Poltalloch, Argyll,² where the principal cist contained a food vessel; in

¹ J. Anderson, *Scotland in Pagan Times. Bronze and Stone Ages*, p. 5.

² J. H. Craw, *Proc. Soc. Ant. Scot.*, vol. lxxv. p. 276.

a round cairn at Inverlael, Inverbroom, Ross;¹ in a round cairn in Townland of Curraghbinny, Co. Cork;² and in a round barrow in the Netherlands.³ Where there have been undisturbed burials they have always been of the early-middle period of the Bronze Age, so that the Crescent is of some use in arriving at a possible date for the construction of the cairn that contains it. The centre Ring Cairn at Loanhead, however, would seem to be of a slightly later date than that indicated by the evidence provided by the above cairns, since the Crescent overlay the hearth upon which a body, or bodies, had been cremated. The cairn at Townland of Curraghbinny also yielded a cremated burial. We are therefore reduced to inferring that the construction of the centre Ring Cairn at Loanhead might have taken place in the middle Bronze Age, and that construction might even be contemporary with the deposition of the Incense Cup in the cist. Of one thing we can be sure, and that is that the construction of the cairn did not antedate the advent of cremation.

This hardly serves to explain the presence of the beaker sherds. We have seen that none was found where a cairn did not exist, so that one concludes that they must be associated in some way with that particular location, if not actually with the cairn itself. These locations are near the monoliths and in the Centre Pit, apart from the case of the paving adjoining Minor Cairn No. 9, which, taking into consideration the discovery of the two beaker sherds, might also be contemporary with the period represented by such ware. Now, the main ring of monoliths must have been in existence in the Bronze Age, No. 9 having upon its inner face five cup-marks,⁴ which, in Scotland, are regarded as being of early Bronze Age date.⁵ If that is so, there was ample opportunity for the deposition of beakers; and the discovery of the beaker rim in the scooped-out hollow beneath the Recumbent Stone would lend weight to the idea, especially since the paving, under which the rim was

¹ James Cree, *Proc. Soc. Ant. Scot.*, vol. xlviii, p. 318.

² S. O'Riordan, *Jour. Cork Hist. and Arch. Soc.*, vol. xxxviii, p. 80.

³ A. E. van Giffen, *Die Bauart der Einzelgräber*, pl. 11.

⁴ Cup-marks are of fairly common occurrence upon the stones of stone circles in the North-East of Scotland, notably at Gask, Skene (on monolith); Nether Corskie, Echt (on West Flanker); Balnacturg, Lumphannan (on Recumbent Stone); Seandhinny, Midmar (on Recumbent Stone); Drumfours, Cushine (on Recumbent Stone); Potterton, Bellhelvie (on West Flanker); Balquham, Chapel of Garoch (on East Flanker); Ballhaggardly, Chapel of Garoch (on monolith); Loanend, Premnay (on Recumbent Stone); Pitglassie, Auchterless (on monolith); Thorax (on monolith); St Brannan's Stanes (on West Flanker); Rothiemay (cup- and ring-marks on Recumbent Stone, cup-marks on monolith); Harestanes, Feith-Hill (on monolith). All the above are described by James Ritchie in "Cup-marks on Stone Circles of Aberdeenshire and Banffshire," *Proc. Soc. Ant. Scot.*, vol. lvi, p. 86. Dr J. Graham Callender has kindly informed me that there are cup-marks upon the Recumbent Stone of the circle at Candle Hill, Oyne.

⁵ This is admitted in V. Gordon Childe, *The Bronze Age*, pp. 159, 164 ff.

found, had been placed there prior to the building of the centre Ring Cairn.

Beyond drawing attention to these facts, one is not prepared to say anything. There can be little doubt that the circle witnessed a succession of cultures. As we have seen, the Centre Pit was re-opened apparently in the Iron Age,¹ and the people of that period deposited their dead therein. They cleaned out the small artificially cut depressions (presuming them to have contained something), and, finding them a nuisance, they filled them up with earth before depositing in the Pit the remains of their own dead. Moreover, the Centre Pit must have been open for some time, to judge from the varied collection of pottery rims, before it was finally filled in. The same people opened up the Minor Cairns. Finally, this phase passed and the circle fell into ruin, and people kicked their broken pottery about as they walked over those ruins, thereby forming what has been termed the Secondary Floor. Then came the builders of the Mediæval dyke, who found the stone circle completely derelict.

Mr Richardson has been kind enough to read this paper in manuscript form, and to suggest certain modifications.

RE-ERECTION OF PROSTRATE MONOLITHS.

The re-erection of a prostrate monolith, when no larger than those at Loanhead, is not a difficult undertaking. Since a crater was found for each prostrate monolith, their re-erection was decided upon as part of the scheme of restoration to be continued next season. The fact that most of the original packing stones remained *in situ*, in addition to the triangular form of crater, left no doubt as to the exact manner in which each monolith had originally stood. The whole undertaking was accomplished with the help of a 1-ton block and three "pinches" to serve as levers.

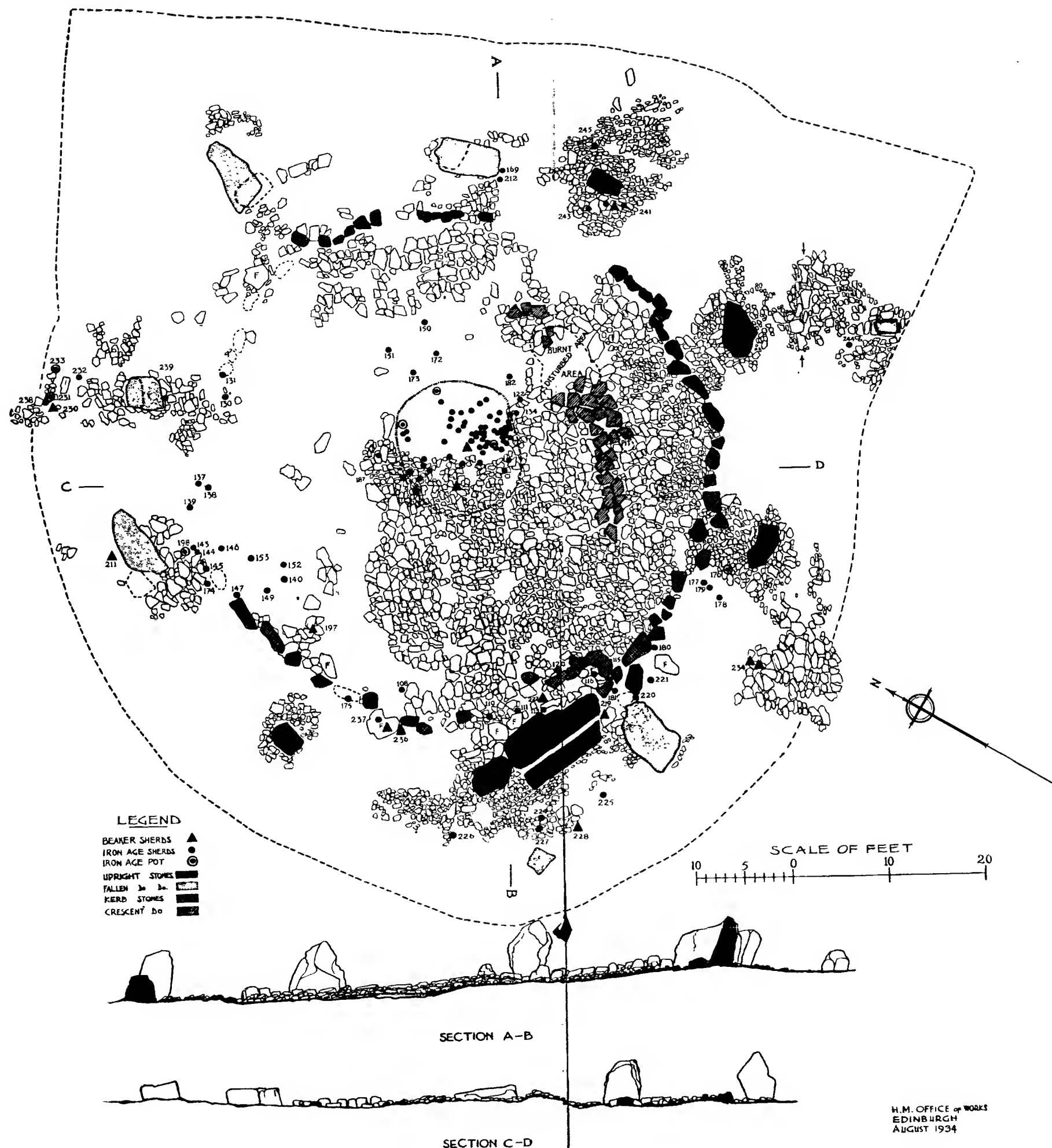
Commencing with No. 3, the re-erection was accomplished in accord-

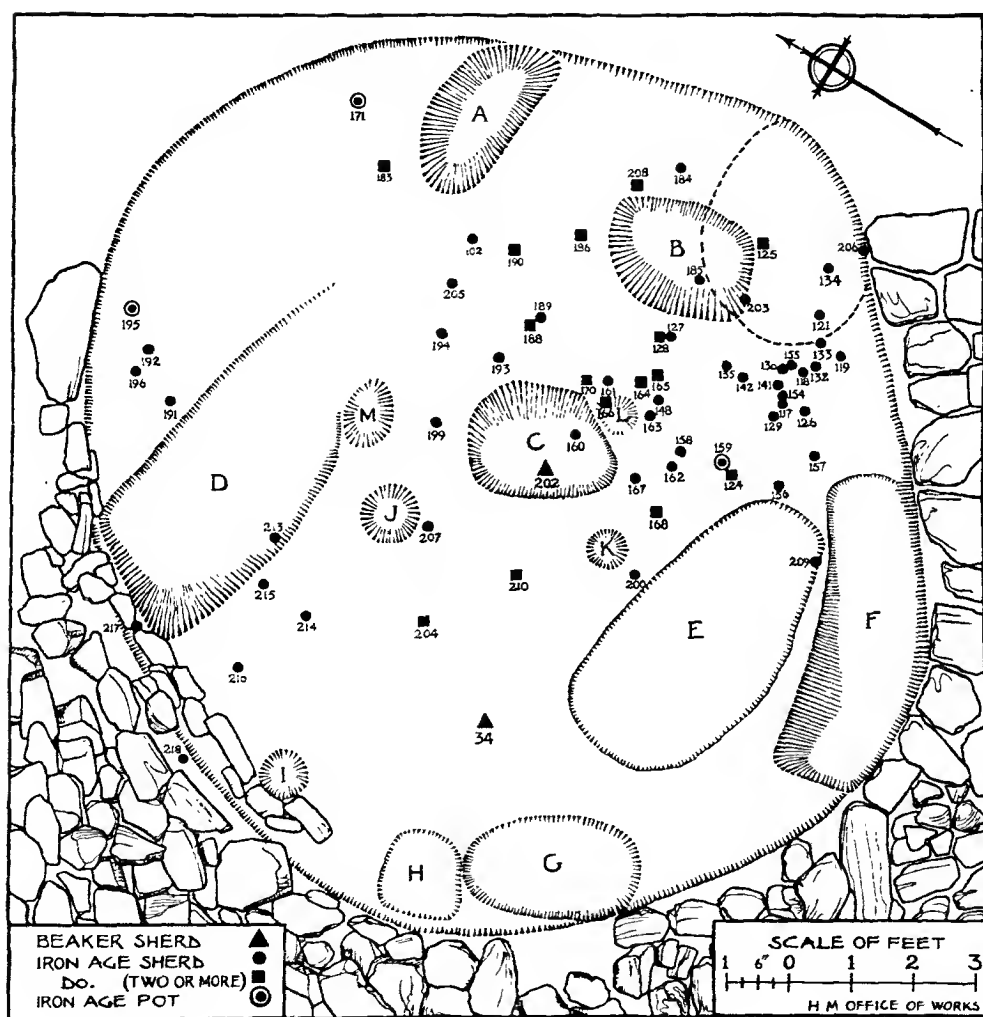
¹ That the deposition of Iron Age ware occurred subsequent to the building of stone circles can be inferred from other sites. The following circles have yielded Bronze Age ware: North Strone, Alford ("clay urn" with incised decoration), Candle Hill, Old Rayne (stone Brazer), *Proc. Soc. Ant. Scot.*, vol. xxxvi, pp. 494, 539; West Circle, Logie Newton (Cinerary Urn), and Burrel-dales (Cinerary Urn), *Ibid.*, vol. xxxvii, pp. 101, 104; Hill of Thack, Kintore (cordoned Cinerary Urns), *Ibid.*, vol. ii, p. 305 and vol. xxxv, p. 194; Crichie, Kintore (Cinerary Urns and battle-axe), *Ibid.*, vol. xxxv, p. 222; in area presumed to have been enclosed by the Stone Circle (now removed) on Hill of Culsh (Incense Cup and Cinerary Urns), *Ibid.*, vol. xxxviii, p. 264; Newton of Montblairry (encrusted Cinerary Urn), *Ibid.*, vol. xl, p. 167. Dr Cyril Fox believes this urn to be an intermediate form between the enlarged Food Vessel and the Encrusted Urn (C. Fox, "An Encrusted Urn of the Bronze Age from Wales; with Notes on the Origin and Distribution of the Type," *Antiquaries Journal*, vol. vii, p. 115).

ance with the principles of the theory recently set forth.¹ The monolith was therefore levered up on to its shorter side; thereafter it was levered forward until the fulcrum rested within two inches of the edge of the crater. The block was then placed in position vertically above the middle of the crater, and chains were fixed round the apex of the monolith. It yielded readily enough to the pull exerted by the block, and this is because we find that, using the formula given, the maximum load at the start would amount to only .904 ton, presuming the monolith to weigh 3 tons. This load decreases rapidly when once the stone moves about its fulcrum. When the monolith was half raised it was propped up, and the shear legs moved to bring the block into such a position as to provide more of a horizontal pull than a vertical one. Subsequent to this the monolith was handled easily, its base being carefully guided into the crater with the aid of the levers. At no time was there any real tendency for the stone to pitch sideways; and finally it slid into an upright position in the original, undisturbed socket, with many of the original packing stones still in position (see fig. 8). Further packing stones were then carefully rammed in between the sides of the crater and the monolith, after which clayey subsoil was beaten in to prevent any tendency on the part of the stones to work loose.

Monolith No. 6 was erected in the same manner; but in the case of No. 5 advantage was taken of the depth of soil upon which it rested, which brought it to a sufficient height to permit of its being tipped into the crater from where it lay. The position of the prostrate East Flanker made it impossible to raise it any other way than by pulling it over towards the interior of the circle. At first it was found quite impossible to erect it at all from a horizontal position, owing to its persistent tendency to swivel about its triangular base. Special means had to be adopted to prevent this: and the whole task of erection took twice as long as any one of the preceding operations. This at least demonstrates the practicability of the new method employed above.

¹ H. E. Kilbride-Jones, *loc. cit.*, p. 88.



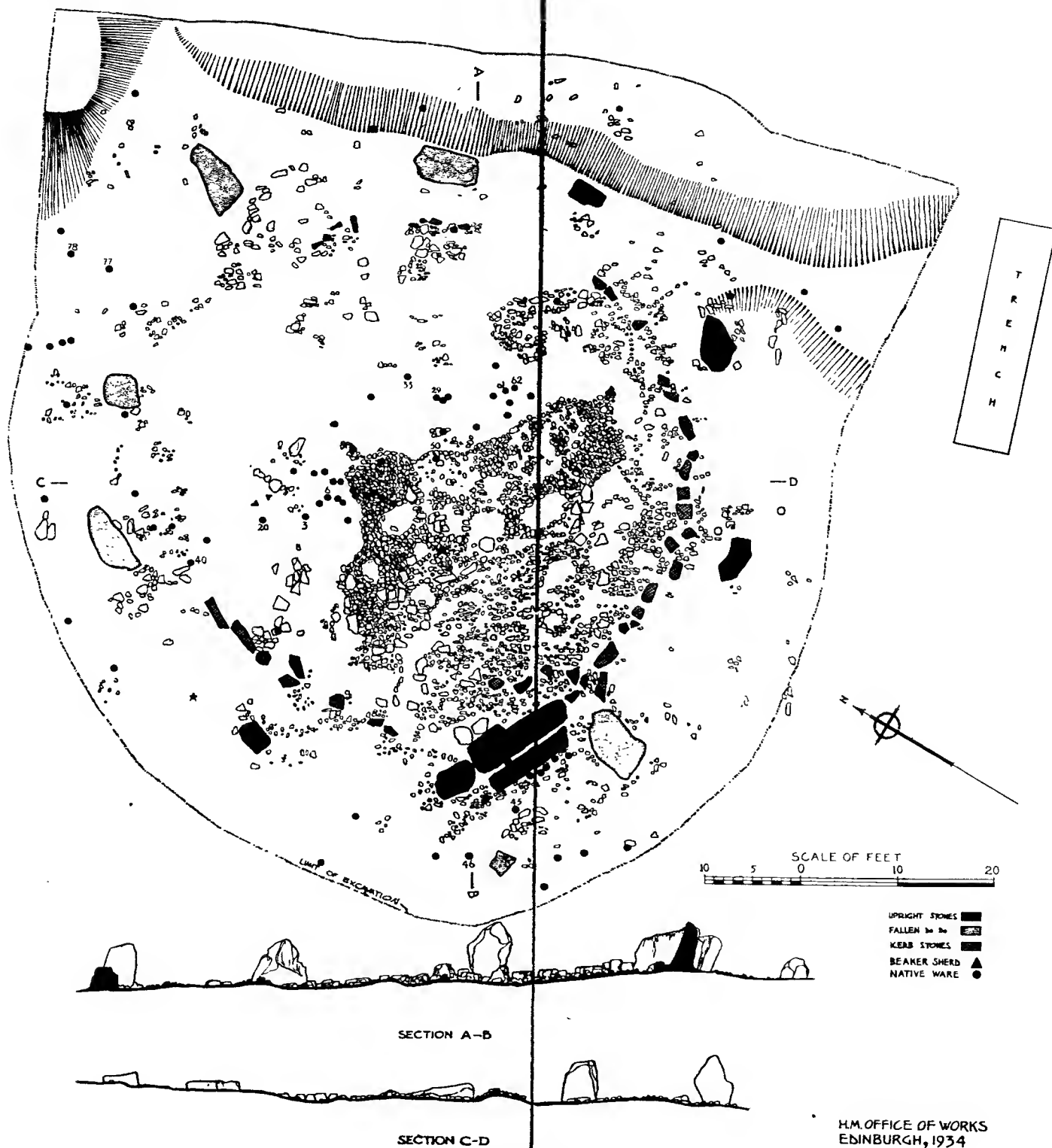


Details of Centre Pit.

H. E. KILBRIDE-JONES.

PLATE II.

[To face page 196.



H. E. KILBRIDE-JONES.

Plan and Sections of Secondary Floor.

PLATE III.
[To face page 196.

ANALYSIS AND INVENTORY OF IRON AGE POTTERY FROM LOANHEAD OF DAVIOT.

The collection of Iron Age pottery from the stone circle at Loanhead of Daviot is truly remarkable on account of its variety, and nothing comparable in numbers has hitherto been found upon the mainland of Scotland. Most of our Iron Age pottery has been recovered from dwelling-places in the isles around our coasts, most notable being that from Jarlshof. Isolated in these small islands of the north and west, the ware is less subject to external influence, and local development may either show a lagging behind or it may advance after its own ideals. With such a collection from the mainland as that now under consideration, any movements or trade relationships of the people would be likely to make themselves felt in the forming of rim and outline, so that an analysis might throw fresh light upon the culture of the potters, whether that culture was indigenous or whether it was subject to foreign influence.

Such an analysis is attempted here. The development of rim form, even in its diversity, appears to be so orderly, and alike the change of texture and outline, that a division into Type and Period has been attempted. A rapid change in texture and form has occasioned the termination of one period and the beginning of another; but the absence of associated datable relics makes the division purely tentative.

Period I.

Type 1.—This type is probably the earliest of characteristic Iron Age forms: it merely follows the example set by the formless rims of the latest cordoned cinerary urns. The quality of the ware is suggestive of the cinerary urn: it is friable, poorly baked, and coarse, usually containing large grit; and the vessels seem to have been wide-mouthed, but narrowing to the base.

Towards the end of Period I, a change takes place: the paste becomes finer, the grit is better ground, and there is more care displayed in the manufacture of the ware. Moreover, the potters were beginning to experiment with rim form.

Vessels similar to Type 1 were characteristic of the earliest period at Jarlshof.¹

¹ A. O. Curle, "An Account of Further Excavation at Jarlshof, Sumburgh, Shetland, in 1932 and 1933, on behalf of H.M. Office of Works," *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 283 *et seq.*

Period II.

At the beginning of this period the experiment in rim forms which was noticed at the end of Period I., is rapidly carried forward.

Types 2 and 3.—These two types represent a parallel development. The vessels seem to be decreasing in size, their walls are thinner, the paste is of a finer texture, and they are better baked. The rims are often carefully and well formed. Whereas Type 2 seems to continue to be wide-mouthed, Type 3 shows a constricting of the neck, which naturally tends to produce a globular form.

Type 4.—This type is derived from No. 2, Type 2, and becomes a parallel development thereto. This seems to be both domestic and sepulchral ware. The constricting of the neck is again noticeable.

The flattening of rim, noted in connection with Type 2, is typical of the second period at Jarlshof.¹

Period III.

Whereas there seemed to be a general tendency for the ware of Period II. to become darker in colour, that of Period III. is black. The average product of this period is fairly thin, the paste is well baked and hard, and the grit content is sometimes so fine as to be nearly invisible. This is a period of globular pots: and the steady decrease in the size of mouth, noticeable at the beginning, increases the angle of the lip to the wall. Then a change takes place: with the advent of a more slender form of vessel, the lip and neck straighten out, and the globular form is far less pronounced. This sequence of development and degeneration probably ends towards the beginning of the Roman period.

Type 2.—Still persisting into Period III. is Type 2, now in a final and curious form, and black throughout.

Type 5.—This ware is apparently purely domestic. The origin of the type is to be found in No. 3, Type 4. Development is gradual, and reaches a maximum in No. 7: thereafter there is a gradual degeneration, and at the end of the period it seems almost as though the potters had once again lost all interest in rim form.

Period IV.

A re-awakening interest in rim form characterises this period. The ware is no longer black, but instead, more often than not, is of a red

¹ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 283 *et seq.*

colour. It is difficult, from the small number of rims (only 4 were found), to judge whether the potters were influenced by the penetration of exotic forms, except in the case of No. 4. Type 6, which seems to be definitely of Roman type. We may take it, therefore, that Period IV. saw the arrival, and very likely the departure, of the Romans: and the period is probably contemporary with the later occupation of the brochs.

Type 6.—A heavy slip, which is well burnished, is characteristic of this type. The ware is usually red throughout, and contains fine grit, and is well baked.

In reviewing the foregoing types, there seems to be little ground for assuming that the potters were influenced by the intrusion of exotic forms, and the mere flattening of a rim is insufficient to prove a connection with types characteristic of certain Iron Age sites in England. Such a flattening is the most natural outcome of the potters' imagination, and is apparent in nearly all ages. When, however, the potter commences to fashion or distort the slight inversion and eversion produced by that flattening, we can safely attach some significance to the form thereby produced: it will either follow local development, or else it will be distorted in such a way as to provide definite evidence of the introduction of exotic forms from outside. Moreover, excepting a definite movement of peoples, we might expect to find the exotic ware side by side with the native copies, just as in the south-west of England we find imported Belgic ware side by side with native hand-made copies. However, such conditions cannot be claimed for Iron Age sites in Scotland: instead, the native pottery seems to be the natural outcome of local national development, a development that was both gradual and peaceful. There is nothing in England comparable to the development of Type 2 in Period III.

Apart from the question of origin, there are certain resemblances to southern types which might be noted here. At Park Brow, near Cissbury,¹ there seems to be the same orderly sequence which we noted at Loanhead, from a wide mouth to a narrowing of the neck, the angle of the rim to the body of the vessel becoming steeper throughout the "La Tene IV." period. Our pottery further agrees to some extent with the general change of colour of the Iron Age ware from Fifield Bavant Down,² where that of Hallstatt type is red to reddish-brown, and that nearer Romano-British times becomes predominantly black. A few of our

¹ *Archæologia*, vol. 76, pp. 19-25.

² R. C. C. Clay, *Walls, Arch. Mag.*, vol. xlii, p. 475.

pot-forms, too, seem to recall to mind the types characteristic of the La Tene I. period in England, although none of the rim forms of the latter are like the Scots Iron Age forms. Then there is the rim which expands into a lug three-quarters of an inch below the lip (No. 181). Although there are no parallels in Scotland, at Fifield Bavant pots

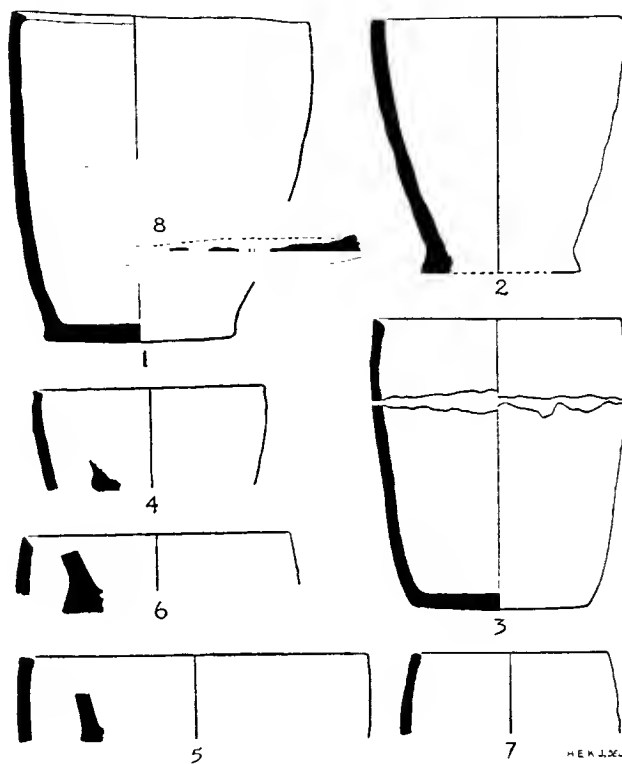


Fig. 10. Restored Iron Age Vessels. (1.)

with similar lugs were found,¹ although in the latter instance they were pierced vertically, whereas the Loanhead specimen is unpierced (see Miscellaneous Rims, No. 12). Again, No. 3 of Type 1 might have borne some resemblance to the outlines of some of the early ware from Scarborough.²

So much for the story revealed by the form of rim and outline. In turning to a consideration of base types, we discover that very little can

¹ R. C. C. Clay, *Wilds. Arch. Mag.*, vol. xlii, p. 474, pl. iv, fig. 10. See also Swallowcliffe Down, La Tene I. site, in *Ibid.*, vol. xliii, pl. vi, fig. 5.

² *Archaeologia*, vol. 77, pp. 189-90.

be added to what has just been said. Apart from the sparsity of bases (there are only fifteen represented), only seven were associated with rims, and these, unfortunately, all belong to the earlier periods. We are thus left with an entire absence of data as to the form assumed in Periods III. and IV., when attention to detail was making itself manifest. It will be seen that the bases with the most pronounced splay all belong to Period I. and the beginning of Period II. Type 1. No. 9 (fig. 10, No. 2), has not entirely shaken off Bronze Age influence: in feeling it is essentially a Bronze Age type, and it shows with what tenacity the potters, now living in an age of iron weapons and tools, clung to the old conventions. The same tradition is handed down to Period II., where we observe that No. 3 of Type 3, derived incidentally from the above example, possesses the same wide splaying of the base. It is an idea that makes for clumsiness, and when the ware becomes finer, and the form of rim more delicate, we see that conservatism will have its way, but the splay is now small and sometimes carefully rounded off (fig. 10, No. 4; Type 3, No. 7), and, in one instance, entirely absent (fig. 10, No. 3; Type 4, No. 1). The development of the globular pot would tend to bring back the splay into fashion, since something of this nature is required to give width to the base and stability to the pot. Such a base is probably No. 4, fig. 15A.

In reviewing the foregoing details we see that whilst this country was probably conscious of developments proceeding outside its confines, it was very little influenced in the matter of pottery form. That was indigenous, the result of native artistry.

Period I. (see fig. 11).

- Type 1.*—No. 1. Rim of coarse, fairly hard ware, containing large grit. Pinkish-buff throughout, but slightly blackened on exterior. Plan No. 225, found at 6 feet 7 inches below datum. Parallel: Old Keig, fig. 13, Nos. 5 and 8.¹
- .. No. 2. Rim of coarse ware, containing large granite grit. Black exterior to half of thickness, red interior to half of thickness of ware. Plan No. 224, found at 6 feet 5 inches below datum.
- .. No. 3. Rim of fairly thick, though moderately fine ware, containing fine grit. Buff in colour, with encrusted interior. Plan No. 241, found upon sub-soil in Minor Cairn No. 7.

¹ V. G. Childe, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 390.

Type 1.—No. 4. Rim of coarse friable ware, black exterior, buff interior. The paste is burnt black to half its thickness, and contains very large grit. Plan No. 209, found in Centre Pit at 7 feet 4 inches below datum.

„ No. 5. Rim of thick coarse paste, containing small grit. Reddish exterior, extending to half of thickness; black interior, thickly encrusted. Plan No. 242.

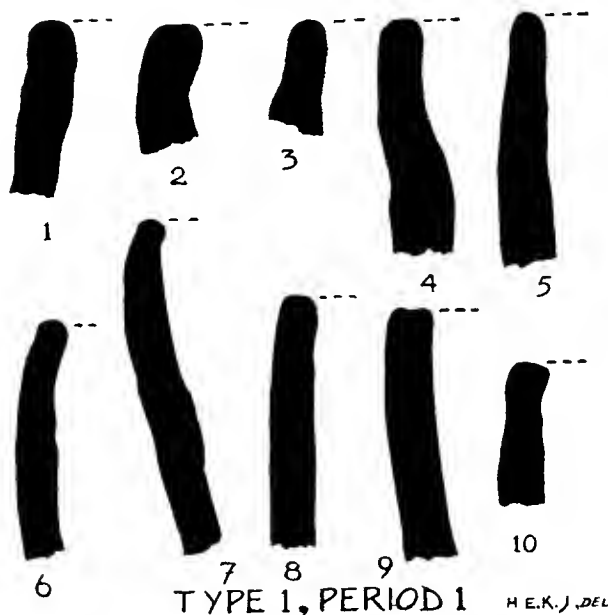


Fig. 11. Rims of Type 1, Period 1. (.)

found in Minor Cairn No. 7 at 4 inches above sub-soil. Parallel: Jarlshof, fig. 52, No. 3.¹

„ No. 6. Rim of friable ware, of brick-red colour, with slight blackening on exterior. Loose porous paste, containing small grit. Plan No. 193, found in Centre Pit at 7 feet 5 inches below datum. Parallel: Jarlshof, fig. 59, No. 8.²

„ No. 7. Rim of moderately hard, reddish-buff ware, blackening at rim. Interior heavily encrusted. Paste contains small grit, and is smoothed on exterior. Plan No. 239, found in Minor Cairn No. 4.

¹ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 285.

² *Ibid.*, p. 296.

Type 1.—No. 8. Rim of coarse, porous ware, containing granitic grit. In colour, red throughout. Plan No. 184, found in Centre Pit at 7 feet 11 inches below datum. Parallel: Jarlshof, fig. 57, No. 13.¹

„ No. 9. Pot of fairly hard, coarse paste, containing large grit. Exterior slightly slipped; interior smoothed, but not slipped, gritty to touch. Buff in colour, with patches of encrustation on interior. Plan No. 159, found in Centre Pit at 7 feet 5 inches below datum.

„ No. 10. Rim of coarse, light buff-coloured ware, containing medium-sized grit. Core of blackish colour. Plan No. 204, found in Centre Pit at 7 feet 6 inches below datum. Parallel: Old Keig, fig. 5, No. 2.²

Period II. (see fig. 12).

Type 2.—No. 1. Pot of fairly hard paste, containing little grit. Blackish exterior, red interior. Plan No. 198, found in Minor Cairn No. 3. Parallels: Old Keig, fig. 5, Nos. 1, 7, 8;³ fig. 13, No. 6.⁴ Jarlshof, fig. 31, No. 3.⁵ Traprain Law, fig. 12, No. 17.⁶

„ No. 2. Rim of coarse ware, containing very little grit: thin slip on interior. Interior brownish-red, exterior blackish, with slight encrustation. Plan No. 151, found at 6 feet 10 inches below datum. Parallel: Old Keig, fig. 13, Nos. 3 and 4.⁷

„ No. 3. Rim of reddish-black ware: fairly fine paste, containing fine grit. Plan No. 187, found at 6 feet 7 inches below datum. Parallel: Covesea, fig. 11, No. 6.⁸

„ No. 4. Rim of moderately fine paste, containing fine grit. Buff exterior, slightly encrusted, buff-red interior; well baked and hard. Plan No. 144, found at 5 feet 6 inches below datum.

„ No. 5. Pot of moderately hard paste, containing medium-sized grit. Black interior and exterior, red towards base. Both interior and exterior apparently slipped and smoothed. On interior of base fine

¹ *Ibid.*, p. 292.

⁴ *Ibid.*, vol. lxxviii, p. 390.

⁷ *Ibid.*, vol. lxxviii, p. 390.

² *Ibid.*, vol. lxxvii, p. 46.

³ *Ibid.*, vol. lxxvii, p. 111.

⁵ *Ibid.*, vol. lxxv, p. 190.

⁴ *Ibid.*

⁶ *Ibid.*, vol. xlix, p. 157.

finger impressions. Plan No. 195, found in Centre Pit at 7 feet below datum. Parallel: Old Keig, fig. 5, No. 4.¹

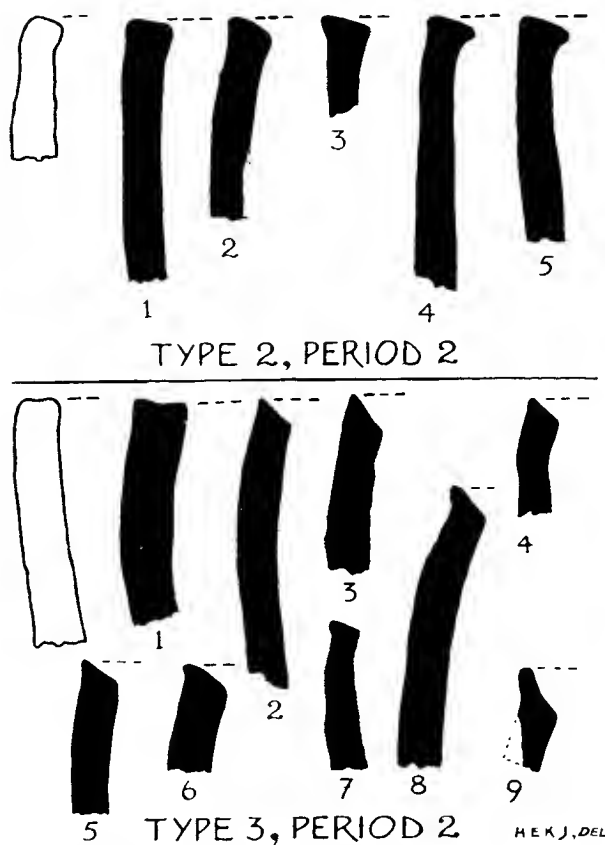


Fig. 12. Rims of Types 2 and 3, Period 2. (3.)

(Note.—Type 2 is a derivative of Type 1, No. 10, and Type 3 of Type 1, No. 9. Derivatives in black, originals open.)

Period II. (see fig. 12).

Type 3.—No. 1. Rim of thick, moderately coarse ware, containing small grit, with slight slip on interior. Blackish-brown in colour. Plan Nos. 158, 199, 200, found in Centre Pit at 7 feet 4 inches (158), 6 feet 5 inches (199), and 7 feet 5 inches (200). Parallel: Jarlshof, fig. 52, No. 5.²

¹ *Proc. Soc. Ant. Scot.*, vol. lxxvii, p. 46.

² *Ibid.*, vol. lxxviii, p. 285.

- Type 3.*—No. 2. Rim of coarse paste, containing fairly large grit. Brownish-black exterior, black interior with encrustation. Plan No. 136, found in Centre Pit at 7 feet 2 inches below datum.
- „ No. 3. Pot of coarse, fairly hard ware, containing small, and sometimes large, grit. Light reddish-buff at base, blackening towards the rim. Slight slip on interior. Pronounced vertical finger striations on exterior. Plan No. 176, found in Minor Cairn No. 9.
- „ No. 4. Rim of moderately fine paste, containing small grit. Buff in colour. From Centre Pit.
- „ No. 5. Rim of moderately fine paste with black core, and containing fine grit. Light brownish-black in colour, slightly blacker interior. Plan Nos. 154, 157, found in Centre Pit at 7 feet 5 inches and 7 feet 8 inches below datum.
- „ No. 6. Rim of thick, moderately coarse ware, containing some large grit. Buff in colour, blackened interior, smoothed on both surfaces. Plan No. 171, found in Centre Pit at 7 feet 6 inches below datum.
- „ No. 7. Part of pot of hard, thin ware, containing fine grit. Dark red exterior, black interior, slightly encrusted. Interior smoothed, and perhaps slipped. Plan No. 171, found in Centre Pit at 7 feet 6 inches below datum. Parallel: Old Keig, fig. 13. No. 11.¹
- „ No. 8. Rim of red ware, black interior with heavy encrustation. Coarse paste, containing fairly large grit. Plan No. 171, found with above (No. 7). Parallel: Covesea, fig. 11. No. 1.²
- „ No. 9. Rim of hard, blackish ware, reddish exterior. Fine paste, containing fine grit, and smoothed. Plan No. 116, found at 5 feet 9 inches below datum.

Period II. (see fig. 13).

- Type 4.*—No. 1. Pot of fairly hard ware, containing small grit. Light reddish-buff in colour, encrusted on part of interior and by rim on exterior. Slight vertical

¹ *Ibid.*, vol. lxxiii, p. 390.

² *Ibid.*, vol. lxxv, p. 190.

finger striations on exterior towards base. Plan No. 233, found in Minor Cairn No. 4.

Type 4.—No. 2. Rim of moderately fine paste, containing fairly large grit. Reddish-brown exterior, black in-

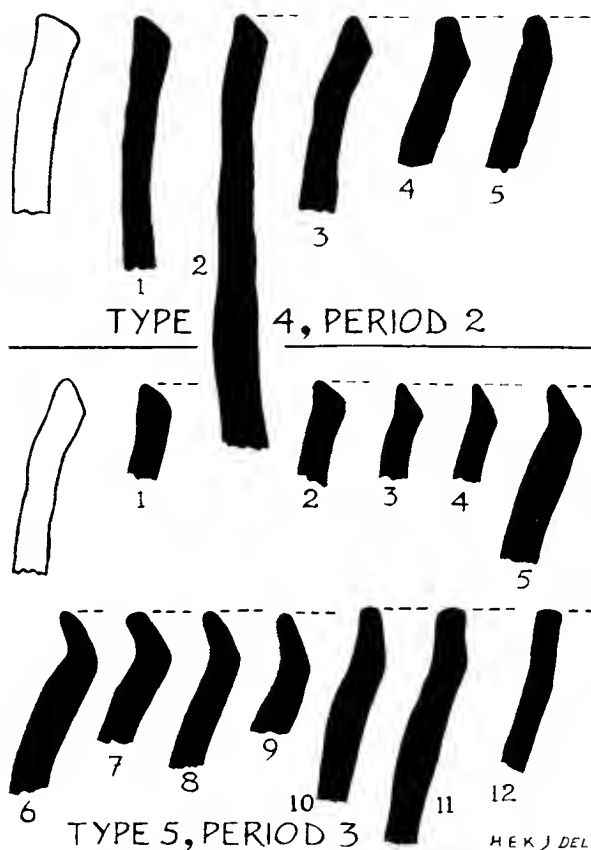


Fig. 13. Rims of Type 4, Period 2, and of Type 5, Period 3.

(Note.—Type 4 is a derivative of Type 2, No. 2, and Type 5 of Type 4, No. 3.)

terior thickly encrusted. Plan No. 205, found in Centre Pit on subsoil at 7 feet 9 inches below datum. Parallel: Traprain Law, fig. 12, No. 7.¹

.. No. 3. Rim of fairly fine paste, containing one or two pieces of large grit. Black ware, red exterior, interior encrusted. Plan No. 150, found at 7 feet below datum. Parallel: Traprain Law, fig. 12, No. 12.²

¹ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. xlix, p. 157.

² *Ibid.*

Type 4.—No. 4. Rim of hard, black ware, with red exterior, containing fine grit. Interior slightly slipped and heavily encrusted, exterior smoothed. Plan No. 213, found in Centre Pit at 7 feet below datum.

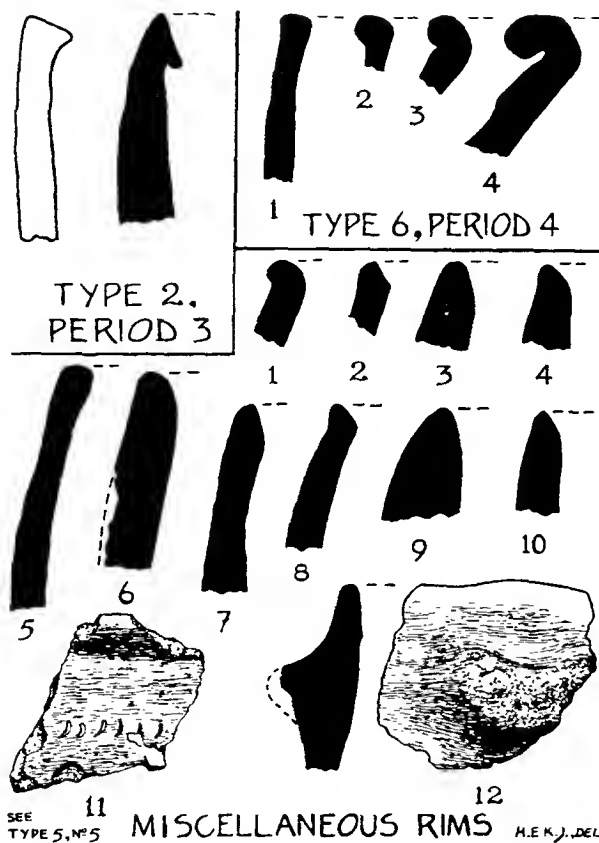


Fig. 14. Rims of Type 2, Period 3; Type 6, Period 4; and Miscellaneous Rims.

(Note. —Type 2, Period 3 is a derivative of Type 2, No. 5, and Type 6 perhaps of Type 5, No. 12, although this is uncertain.)

Type 4.—No. 5. Rim of hard, moderately coarse ware, containing fine grit. Buff in colour. Plan No. 182, found at 7 feet 6 inches below datum.

Period III. (see fig. 14).

Type 2.—Rim of thick, black ware, containing medium-sized grit. Exterior heavily encrusted. The ware is shiny, yet rough to the touch, and has probably been

slipped. Plan No. 189. found in Centre Pit at 7 feet 4 inches below datum.

Period III. (see fig. 13).

- Type 5.*—No. 1. Rim of moderately fine, hard paste, containing small grit. Buff coloured, blackish exterior. Plan No. 238, found on subsoil in Minor Cairn No. 4.
- „ No. 2. Rim of hard, blackish ware, red exterior, containing fine and medium-sized grit. Slightly slipped, and smoothed on both faces. Found in Centre Pit.
- „ No. 3. Rim of hard, thin ware, containing fine grit. Reddish-buff in colour, black interior, slightly encrusted. Slipped and smoothed. Plan No. 179, found at 7 feet 8 inches below datum. Parallel: Covesea, fig. 11, No. 2.¹
- „ No. 4. Rim of hard, light-buff ware, fine paste containing fine grit. Plan No. 111, found at 5 feet 7 inches below datum.
- „ No. 5. Rim of hard ware, containing fine grit. Blackish-buff in colour, smoothed and slipped on interior, smoothed on exterior. Decorated below rim. Plan No. 149, found in post-hole (?) at 5 feet 9 inches below datum.
- „ No. 6. Rim of hard ware, containing fine grit. Blackish-buff in colour, smoothed; slight encrustation on interior. Plan No. 147, found at 5 feet 5 inches below datum. Parallel: Covesea, fig. 21, No. 1.²
- „ No. 7. Rim of hard, greyish-buff ware, containing fine grit. Smoothed, producing shiny, but gritty, surface. Plan No. 152, found at 6 feet below datum.
- „ No. 8. Rim of hard, buff-coloured ware, containing fine grit: smoothed. Plan No. 153, found at 5 feet 10 inches below datum.
- „ No. 9. Rim of hard ware, containing fine grit. Blackish-buff in colour, smoothed; exterior encrusted.
- „ No. 10. Rim of hard, fine paste, containing small grit. Black paste, red exterior, slipped; interior slipped and smoothed and heavily encrusted. Plan No. 217.

¹ *Proc. Soc. Ant. Scot.*, vol. lxx, p. 190.

² *Ibid.*, vol. lxx, p. 203.

found in Centre Pit at 7 feet 2 inches below datum. Parallel: Covesea, fig. 11. No. 3.¹

Type 5.—No. 11. Rim of hard ware, containing small grit. Black paste, red exterior. Interior slipped and smoothed, exterior smoothed. Plan No. 214, found in Centre Pit at 7 feet 3 inches below datum. Parallels: Covesea, fig. 11. No. 3;² Traprain Law, fig. 12. No. 8.³

.. No. 12. Rim of hard, thin ware, containing fine grit. Buff in colour, with pinkish-buff exterior. Smoothed on both sides, but gritty to touch. Found in Centre Pit.

Period IV. (see fig. 14).

Type 6.—No. 1. Rim of thin, hard ware, containing fine grit. Blackish paste, with red exterior, smoothed. Plan No. 154, found in Centre Pit at 7 feet 5 inches below datum.

.. No. 2. Rim of hard, but much rubbed blackish-buff ware, containing very small grit.

.. No. 3. Rim of hard ware, containing small grit. Reddish-black in colour, with thick slip on rim and interior, burnished. Plan No. 245, found amongst stones of Minor Cairn No. 7.

.. No. 4. Rim of hard ware, containing small grit. Dark red in colour, covered on interior and exterior with thick slip: burnished. There is apparently the beginning of a shoulder below rim. Plan No. 218, found in Centre Pit at 7 feet 5 inches below datum.

Miscellaneous Rims (see fig. 14).

No. 1. Rim of fairly hard ware, containing small grit. Buff throughout in colour, red slip on exterior and interior. Plan No. 244, found in cairn-like structure near cist.

No. 2. Rim of thin, hard, black ware, containing fine grit. Slipped and slightly burnished. Plan No. 219, found in filling in socket of East Flanker.

No. 3. Rim of fairly hard, blackish-buff ware, containing small grit. Smoothed on interior. Plan No. 232, found in Minor Cairn No. 4.

¹ *Proc. Soc. Ant. Scot.*, vol. lxx, p. 190.

² *Ibid.*

³ *Ibid.*, vol. xlix, p. 157.

- No. 4. Rim of fairly hard, reddish-buff coloured ware, containing small grit. Rather decayed, but probably slipped. Plan No 238, found in Minor Cairn No. 4.
- No. 5. Part of pot of hard yet coarse ware, containing fairly large grit; the ware has rather the appearance of flaky pastry. Pinkish-buff in colour, greyish at lip. Slightly slipped, with some attempt at smoothing. Plan Nos. 171, 185, 190, 204, found in Centre Pit at 7 feet 6 inches for Nos. 171, 185, and 204; at 7 feet 1 inch for 190.
- No. 6. Rim of moderately hard, reddish ware, containing medium-sized grit. Slipped on interior and exterior, slightly burnished on exterior. Plan No. 243, found in Minor Cairn No. 7.
- No. 7. Rim of coarse, hard ware, containing some large grit. Buff coloured, slightly black core, with slight encrustation on exterior. Plan No. 186, found in Centre Pit on subsoil at 7 feet 9 inches below datum.
- No. 8. Rim of hard, black ware, red exterior. Fine paste, containing fine grit; interior slipped and smoothed, exterior slipped. Plan No. 183, found in Centre Pit at 7 feet 3 inches below datum.
- No. 9. Rim of brick-red, friable ware, containing small grit. Slightly slipped on interior. Plan Nos. 169, 212.
- No. 10. Rim of coarse ware, containing moderately large grit. Exterior reddish-buff, interior blackish. Exterior coarse and rough, interior slipped and smooth. Plan No. 119, found in filling of Centre Pit at 6 feet 5 inches below datum.

Bases (see fig. 15A).

- No. 1. Base of fairly hard ware, containing small grit. Buff throughout in colour; smoothed on interior and exterior. Plan No. 206, found on subsoil in Centre Pit at 7 feet 10 inches below datum.
- No. 2. Base of coarse ware, containing medium-sized grit. Red throughout in colour. Plan No. 173, found at 7 feet 3 inches below datum.
- No. 3. Base of ware, containing small grit. Exterior red and friable, interior black, slipped and hard; interior slightly encrusted. Plan No. 141, found in Centre Pit at 7 feet 3 inches below datum.
- No. 4. Base of moderately hard ware, containing small grit. Black

paste, red crust on exterior: slight encrustation on interior.
Plan Nos. 155, 208. found in Centre Pit at 7 feet 6 inches
below datum.

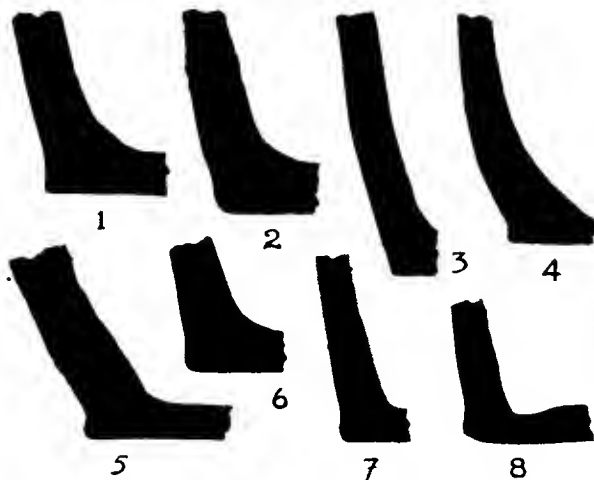


Fig. 15A. Bases from Centre Pit and elsewhere.

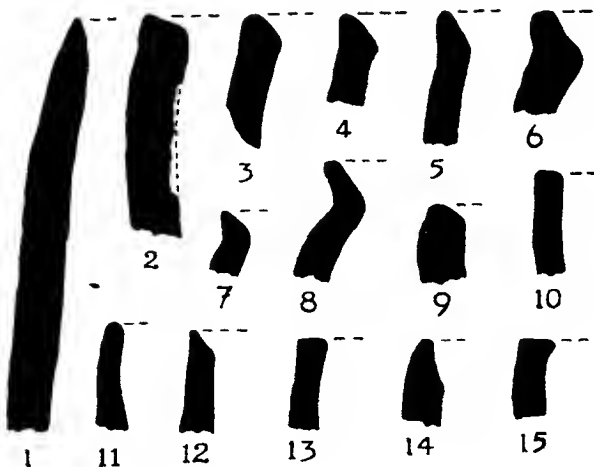


Fig. 15B. Rims from Secondary Floor.

No. 5. Base of fairly coarse ware, containing medium-sized grit.
Red, with slightly black core, smoothed on exterior. Plan
No. 221.

No. 6. Base of fairly hard ware, containing small grit. Buff in

colour, smoothed on both surfaces. Plan No. 204, found in Centre Pit at 7 feet 6 inches below datum.

No. 7. Base of red, friable ware, containing small grit. Slightly smoothed, interior encrusted. Plan No. 124, found in Centre Pit at 7 feet below datum.

No. 8. Base of hard ware, containing fine grit. Blackish-coloured ware, red on exterior. Exterior smoothed, interior slipped and smoothed and encrusted. Plan No. 210, found in Centre Pit at 7 feet 4 inches below datum.

Rims from Secondary Floor (see fig. 15B).

No. 1. Rim of thick, coarse ware, containing some very large grit. Reddish-buff in colour, blackened internally. Plan Nos. 62, 63, found in disturbed area at 6 feet 7 inches below datum.

No. 2. Rim of thick, coarse ware, containing medium-sized grit. Blackish-buff in colour. Plan No. 50, found on stones near edge of disturbed area at 6 feet 10 inches below datum.

No. 3. Rim of moderately coarse ware, containing small grit. Exterior red, interior black in colour. Plan No. 29, found in disturbed area at 6 feet 7 inches below datum.

No. 4. Rim of fairly hard, buff-coloured ware, containing fine grit. Interior slipped and smoothed. Plan No. 77, found on floor outside main ring.

No. 5. Rim of fairly hard ware, containing fine grit. Black paste, red exterior to depth of 1 16th inch, and reddening near rim on interior. Plan Nos. 8, 9, found in disturbed area at 6 feet 3 inches below datum.

No. 6. Rim of thick, rather coarse ware, containing small grit. Blackish-buff throughout, encrusted on exterior. Plan No. 78, found on floor outside main ring.

No. 7. Rim of hard, blackish-coloured ware, containing fine grit. Interior smoothed. Plan No. 45, found on floor on south side of Recumbent Stone at 4 feet 5 inches below datum.

No. 8. Rim of hard, fairly fine ware, containing fine grit. Black in colour, smoothed on interior. Plan No. 20, found in disturbed area at 5 feet 5 inches below datum.

No. 9. Rim of thick, coarse ware, containing small grit. Buff paste, reddish interior. Plan No. 99, found in trench.

No. 10. Rim of fairly hard ware, containing fine grit. Blackish-buff in colour. Plan No. 33, found in disturbed area at 6 feet 6 inches below datum.

- No. 11. Rim of thin, moderately fine ware, containing fine grit. Red in colour. Plan No. 102, found in trench.
- No. 12. Rim of fairly hard ware, containing fine grit. Exterior red in colour, interior buff, slipped and smoothed. Plan No. 40, found on floor at 6 feet 4 inches below datum.
- No. 13. Rim of hard, thin ware, containing fine grit. Blackish-buff in colour, red exterior. Exterior smoothed, interior slipped and smoothed. Plan No. 46, found on floor on south side of Recumbent Stone at 4 feet 10 inches below datum.
- No. 14. Rim of dark, buff-coloured ware, containing small and large grit. Interior slipped and smoothed. Plan No. 60, found on floor at 6 feet 8 inches below datum.
- No. 15. Rim of fairly hard ware, containing fine grit. Reddish-buff interior, blackish-buff exterior. The ware has been smoothed. Plan No. 61, found in disturbed area at 6 feet 8 inches below datum.

Restored and Partly Restored Vessels (see fig. 10).

- No. 1. Plan No. 195. See Type 2, No. 5, for description. Height, $8\frac{3}{8}$ inches; diameter, $7\frac{5}{8}$ inches; diameter of base, $4\frac{7}{8}$ inches.
- No. 2. Plan No. 159. See Type 1, No. 9, for description. Height, $6\frac{1}{2}$ inches; diameter, $6\frac{1}{2}$ inches; diameter of base, $4\frac{1}{8}$ inches.
- No. 3. Plan No. 233. See Type 4, No. 1, for description. Height (approx.), $7\frac{1}{2}$ inches; diameter, $6\frac{1}{2}$ inches; diameter of base, $4\frac{5}{8}$ inches.
- No. 4. Plan No. 171. See Type 3, No. 7, for description. Diameter, 6 inches.
- No. 5. Plan No. 198. See Type 2, No. 1, for description. Diameter, 9 inches.
- No. 6. Plan No. 176. See Type 3, No. 3, for description. Diameter, $6\frac{7}{8}$ inches.
- No. 7. Plan Nos. 171, 185, 190, 204. See Miscellaneous Rims, No. 5, for description. Diameter, 5 inches.
- No. 8. Base of coarse, rough, porous ware, containing large grit, and some pebbles. Buff in colour. Shows considerable finger-markings round base. Plan No. 207, found in Centre Pit at 7 feet 3 inches below datum.

REPORT UPON THE SKELETAL REMAINS FROM THE STONE
CIRCLE AT LOANHEAD OF DAVIOT.

By Professor ALEXANDER LOW, M.A., M.D.

Centre Pit.—Many fragments of cremated bone, coated with the very adherent debris of charcoal: the pieces of bone seem to have been very thoroughly cremated, and have almost a porcelain-like appearance: in this respect they differ from the cremated bones from the Cist. After cleaning and drying, the total weight of bone is approximately 5 lbs. Amongst the pieces can be recognised human arm and forearm bones, head of thigh bone, head of leg bone, ribs, bodies of vertebræ, including the odontoid process of a 2nd cervical vertebra. Many pieces of flat bones of skull—up to $1\frac{1}{2}$ inches by 1 inch—among which can be identified as human, parietal, temporal, occipital, upper jaw, and small piece of orbital margin. Whilst most of those pieces of skull are those of adults, there are some 50 pieces of skull bones of children, perhaps from 2 to 4 years of age.

Cist.—Cremated bones consisting of many splintered pieces of long bones, varying in size up to $1\frac{1}{2}$ inches in length—includes a piece of the articular surface of a human humerus; also some 50 pieces of flat bones of skull, amongst them human parietal, occipital, and temporal.

Secondary Floor (Disturbed Area).—Cremated bone consisting of about 70 pieces of long bones, $\frac{1}{2}$ to $1\frac{1}{2}$ inches in length: also 20 pieces of flat bones of skull from about $\frac{1}{2}$ an inch square to $1\frac{1}{4}$ inch: amongst them are pieces of human parietal.

REPORT UPON THE CHARCOAL.

By E. V. LAING, M.A., D.Sc.

Sample 1.—Large pieces selected from the charcoal submitted: all are exclusively Willow.

Sample 2.—In this sample there is undoubtedly a mixture, and both Hazel and Willow are represented.

Both the above samples are from the Centre Pit.

PART II.

THE STANDING STONES OF CULLERLIE. ECHT.

The site upon which this stone circle stands is both interesting and peculiar. Unlike most stone circles, which usually stand upon elevated ground, the Standing Stones of Cullerlie are situated upon low-lying land, surrounded on nearly all sides by rising ground. The circle is within $1\frac{1}{2}$ miles of the Loch of Skene and $\frac{1}{4}$ mile of the Leuchar Moss; and



Fig. 1. Stone Circle at Cullerlie, Aberdeenshire.

even to-day it is still surrounded by swamps, local fuel being obtained by casting peats in a bog to the west, and also in the Leuchar Moss mentioned above. However, the ground slopes away very gently from the site on all sides, and since the circle itself is built upon a bed of gravel, it is probable that this was once the one dry spot in an otherwise boggy district. The site may have been approached from the south-east, where the land is of a more or less uniform level and dry, and upon which stands the farm of Standing Stones. Continuing in the same direction, at about 200 yards distant from the circle, the ground suddenly rises from 265 feet above Ordnance datum (the level at the farm) to 322 feet

at Hill of Eddieston. On top of this high ground is a single Standing Stone less than 4 feet in height and similar in shape to those of the circle. It is unrecorded on the 6-inch Ordnance Map, and, being still in a southeasterly direction, might have served to mark the way of approach to the stone circle hidden below.

The situation is roughly $3\frac{1}{2}$ miles east of Echt and 10 miles from Aberdeen. The circle consists of eight stones situated round the circumference of a circle of 32 feet diameter. The whole aspect of the monument is in marked contrast to that at Loanhead: not only does it lack the Recumbent Stone, but the monoliths, instead of being flat-faced and shaped, are either rounded (perhaps naturally) or angular. They appear like rough boulders, but their shape is, to a certain extent, intentional, as we shall see later. Again, in contrast to the Recumbent Stone type, the highest monolith is on the north side: it is just 6 feet in height above the level of the floor of the circle, whilst the smallest is only 3 feet 7 inches in height above the same level.

The circle was overgrown with whin bushes when Coles misnamed it,¹ and nothing but a few stones of the inner circles could be seen, due to the site having been used as a dumping-place for field stones.² In 1820, however, the surrounding land had not as yet been cultivated: it was still moorland, from which turf was wont to be cut, and was even denominated a Moss.³ When James Logan wrote of the "Druidical Circle at Leuchar" (as he calls it) in 1820, it was still possible to see the whole structure of seven of the small inner ring cairns,⁴ although the eighth had apparently been destroyed before this time. Continuing, Logan says: "The small circles contained in the larger present a curious singularity: and it is also remarkable that, at a short distance to the south-west, are nine others of similar dimensions." Just what these "nine others of similar dimension" were is hard to state: no trace whatever of them remains. Wilson, copying Logan's statement makes similar observations.⁵ No further record of the monument is extant; so that it is unknown at what period it was so very carefully and thoroughly howked and robbed: the howking was neither indiscriminate nor untidy, so that it was probably accomplished by someone who had some notion of what he was about. This must have occurred prior to the tilling of

¹ F. R. Coles, "Report on Stone Circles in the North-East of Scotland," *Proc. Soc. Ant. Scot.*, vol. xxxv, p. 187.

² Mr William Hogg, tenant of Standing Stones, informed me that both he and his father before him had dumped field stones here.

³ J. Logan, *Archæologia*, vol. xxii, p. 410.

⁴ *Ibid.*

⁵ *Prehistoric Annals of Scotland*, p. 162.

the land, and the use of the site as a depository for stones upwards of ninety years ago. The only inner ring cairn that escaped notice was No. 2.¹ Some of the ring stones of the cairns on the north-east side have been torn out, but one feels that the "excavators" were not responsible for this, for, although they were content merely to rob the monument of its contents, they carefully, though unskilfully, replaced the stones they had removed.

Although the circle is small, it must be unique: none other, containing so many small ring cairns, is known to exist. Apart from these, its several other features are alike of unique interest, and it is just a pity that one has to report that, with the exception of one minute potsherd and three small pieces of worked flint, no relics were recovered.

THE FLOOR.

Not the least interesting feature of the circle is its floor. The builders had apparently levelled the site before erecting the stones, since the floor is fairly level, whereas the underlying gravel bed is rather the reverse. We thus find that in places the floor is only $\frac{1}{2}$ inch above the gravel, and in other sectors, notably on the north-east side, there was a depth of 6 inches of earth between floor and gravel. The floor itself was easily distinguished: it was a shiny, greasy black when newly exposed, turning to a dark brick-red when scraped. It had thus obviously been burnt: and that burning had taken place by the lighting of numerous piles of willow branches. This is inferred from the fact that, whereas the whole floor had been subjected to heat, that heat had been considerably more intense in small patches throughout the whole area. The extent to which this burning took place is marked on the Plan, Pl. IV., by the dotted outline: and it will be observed that it hardly extends beyond the circumference of the circle. This rite of purification, or consecration, of the site by fire had taken place after the erection of the eight monoliths forming the main ring, since, not only had the monoliths themselves every appearance of having been scorched by fire (suggested by the patches of pink and grey on the lower surfaces, colours produced on "bastard" granite by the application of heat), but around the bases of Nos. 3, 4, and 5 at floor level were quantities of grey ash and disintegrated, burnt stone. At this time the eight small ring cairns were not in position, for in every case they were found to have been built upon this burnt floor. Whether the same is true of the eight small

¹ The ring cairns are numbered as follows: Central ring cairn is No. 1; that to immediate left is No. 2; thereafter numbers advance in an anticlockwise direction. Monolith No. 1 is next Cairn No. 2, and numbers advance in same direction as above.

rings themselves is uncertain, owing to their having been sunk to depths of 2 to 5 inches into the soil. However, this much can be said: many of the stones of the small rings, like the monoliths, showed signs of having been subjected to considerable heat.

Upon the floor was a layer of fairly hard earth, which probably represents the accumulations of centuries. It was 6 inches deep, and at various depths within it, and outside the small rings, numerous stones were found lying in disorder. Some were only 1 inch above the level of the floor, whilst others were found at varying and higher levels. They obviously represented cairn stones which had been either thrown out or had fallen out in the course of time. The finding of some at so low a level seems to imply that the monument commenced to fall to pieces at an early date in its history.

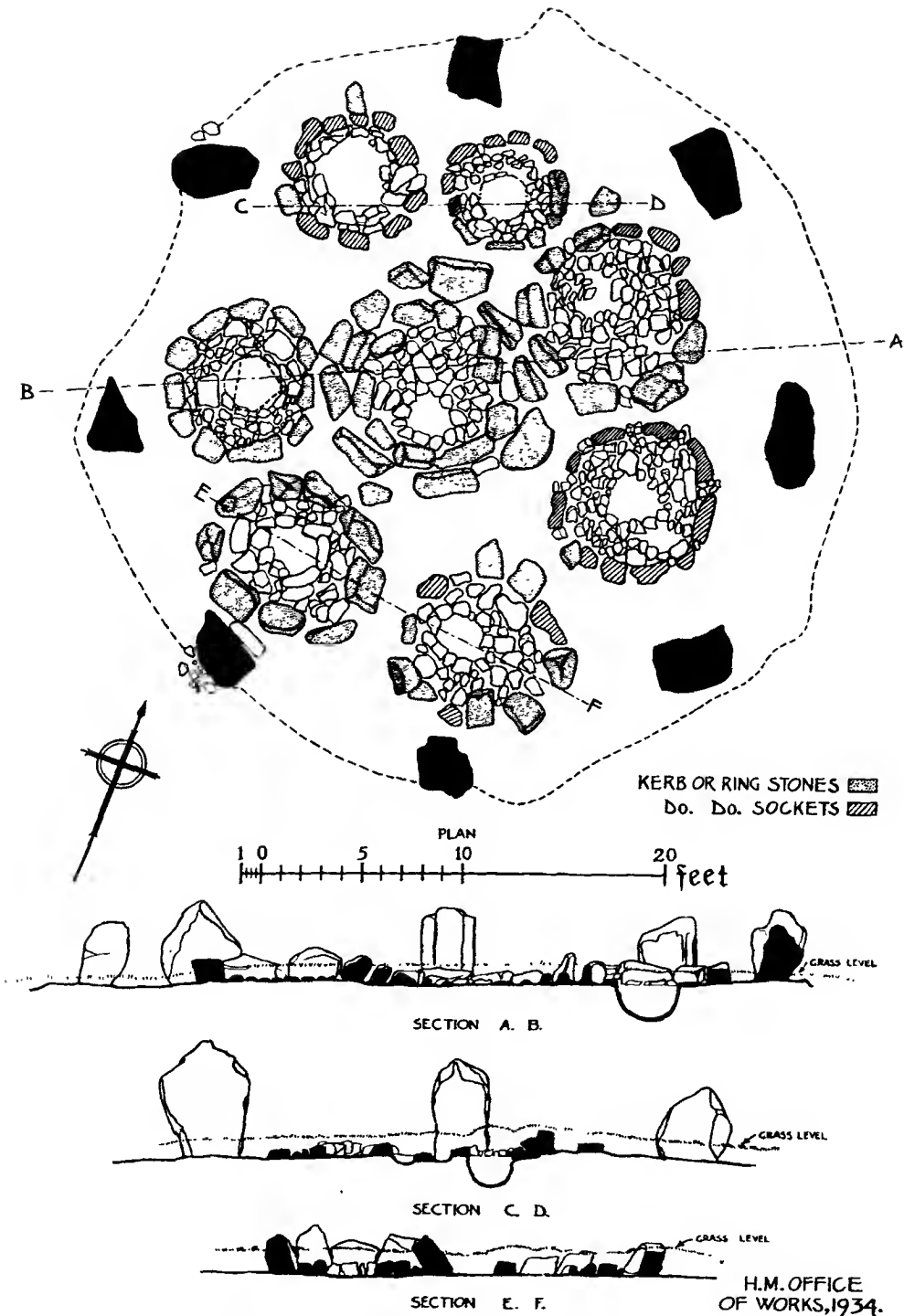
SMALL RING CAIRNS.

There are eight small cairns enclosed within circles, or rings of stones, some of the last attaining a height of two feet. The central cairn, which is the largest, having a diameter of nearly 11 feet, is surrounded by a double concentric ring of stones, whilst the remaining seven cairns, all of smaller dimensions (No. 7 being only 6 feet in diameter), are surrounded by single rings. The central cairn is obviously the most important of the eight, both from its size and position and from being surrounded by a double ring of stones.

There are several interesting numerical coincidences. Not only are there eight monoliths to the main ring, and eight cairns within that ring, but each of the cairns, with one exception, is surrounded by a small ring containing eleven stones: the exception is No. 3, which possesses nine stones. The central double, concentric ring has eleven stones to each circle; and even where sockets alone remain (marked by the shaded areas on the Plan) they are eleven in number.

Central Double Ring Cairn, No. 1.—The double concentric ring presented rather an irregular appearance: not only were the stones badly set up, but they varied greatly in size and shape. The outer of the two rings possessed the largest stones, the average height being 23 inches, and these completely dwarfed the inner of the two rings, where the average height of the stones was less than 1 foot. The enclosed cairn had been extensively disturbed. There was no apparent internal structure, but a roughly circular area devoid of stones on the south side yielded a quantity of charcoal and cremated human remains.

Ring Cairn, No. 2. - This was the sole undisturbed example, and may



Plan and Sections of Stone Circle at Cullerlie, Echt.
H. E. KILBRIDE-JONES.

therefore be taken as being typical of the former appearance of the remaining seven cairns. The surrounding ring of eleven stones was the most uniform within the main ring, all being more or less of an even height of 13 inches. The ring enclosed a cairn which rose slightly above this level in the centre. Removal of the top stones disclosed a capstone, measuring 30 inches by 26 inches, and roughly triangular in form. It rested upon stones which had been carefully laid to form a paved floor, and amongst these stones were two larger flat ones, measuring 18 inches by 14 inches and 19 inches by 16 inches respectively. They were raised, but disclosed nothing of interest. The capstone covered a circular pit, 28 inches in diameter and 21 inches deep, which had been dug out of the natural gravel bed. The sides of the pit were much reddened, and there was charcoal at the bottom to a depth of 10 inches. Some of the charcoal was as large as a closed fist, and amongst it were fragments of calcined human bone. The pit had obviously contained a fire. Upon the charcoal was a layer of "dead" sand, 2 inches to 3 inches deep, and above this, to the level of the paved floor, was black earth. It thus seems that the remains were burnt and buried as they lay.

Ring Cairn, No. 3.—This was the sole ring possessing only nine stones. Most of these were of irregular shape, and of an average height of 23 inches. Three-quarters of the cairn still remained, but there were signs of disorder in the middle. In the centre, and laid upon the burnt floor of the circle, was a cist formed roughly of eight stones: other stones were packed in behind these and the ring. The cist measured 2 feet 8 inches by 1 foot 10 inches and was 10 inches deep. It was filled with dark soil, which contained a quantity of charcoal and some calcined bone.

Ring Cairn, No. 4.—The ring of eleven stones, three of which were missing, was highest on the south side, where the stones were 22 inches high, and it diminished in magnitude towards the north where the stones were only 17 inches high. The ring was considerably disturbed, and not a great deal remained of the cairn, but the lowest stones of the latter were *in situ*. All were lying on the burnt floor of the circle, and towards the west side of the ring some had been arranged in such a way as to form a somewhat irregular cist, measuring 2 feet 4 inches by 1 foot 10 inches, and 7 inches in depth. The cist contained a quantity of charcoal and burnt bone, and, like that of Cairn No. 3, it was orientated approximately east and west.

Ring Cairn, No. 5.—Only one stone, 14 inches high, remained of the ring, but there were ten sockets to show that the total number had originally been eleven. The cairn, which was much disturbed, failed to

disclose any structural feature: but in a clearance near the middle, a quantity of charcoal was found.

Ring Cairn, No. 6.—This cairn lay in hopeless confusion: but scattered amongst the stones were quantities of charcoal and calcined bone, and one minute potsherd was recovered. On the north-eastern side the encircling ring had been torn out, three stones being amissing, and one other was found lying nearby. Some of the remaining ring stones were 24 inches in height.

Ring Cairn, No. 7.—Six of the eleven stones of the ring were amissing, and the average height of those still *in situ* was 15 inches. This was the smallest of the cairns, and remained fairly undisturbed on the south-eastern side. The cairn covered a pit, but no capstone was found. Since the pit had been opened to half its depth, it is impossible to say whether one had formerly existed or not. The pit was 26 inches in diameter and 18 inches in depth. Unlike that of Cairn No. 2, it had not contained a fire, although the bottom of it was full of charcoal, and this charcoal had been covered with a layer of earth in which a quantity of calcined bone was found.

Ring Cairn, No. 8.—Not a single stone of the ring remained in position, but three stones belonging thereto were found nearby. Very little remained of the cairn. There was a large area in the middle full of black earth containing a large amount of ash. The removal of this earth revealed a hard crust-like surface, apparently formed for the most part of hardened ash. It was nearly 1 inch in depth above the level of the floor, and must represent the wood-ash of innumerable fires. No charcoal was recovered, and no cremated bone.

THE MONOLITHS.

It has already been stated that, at a first glance, the monoliths of the main ring appeared to be natural, unshaped boulders. Probably much of their shape was acquired by natural means, but in some cases it is obvious that their form has been acquired artificially, and although they do not conform to the same principles governing the shaping of the monoliths at Loanhead of Daviot, they have nevertheless been fashioned in such a way as to bring the centre of gravity as nearly as possible into a central position. We thus find that most of the monoliths possess a pointed apex: but that apex, in contradistinction to the apices possessed by the monoliths of such circles as those at Castle Fraser, Loanhead, and Old Keig,¹ now resembles an equilateral triangle, the apex of the triangle

¹ See p. 188 of this present report.

being more or less vertically above the centre of the stone, and also vertically above a similarly pointed base. By this expedient the whole weight of the stone is thrown on to the point of the base, which acts as a wedge let into the gravel. These conditions are brought about by the fact that the monoliths stand entirely in a bed of gravel, and, were they not perfectly balanced, subsidence on the side of greatest weight would be the inevitable result. It might be argued that under these conditions a flat base might be preferable: likely enough, such might be the case, but it has to be borne in mind that such a base would provide added difficulties to be overcome in the erection of the monolith, and a pointed base is the result. In any case, a pointed base is very satisfactory, since it provides a greater surface of resistance than would be the case were it flat. Any large monolith shaped like those at Loanhead could hardly be expected to remain upright in a bed of gravel for much longer than a single generation. Such conditions as the above also tend to keep the monoliths small.

Even at Cullerlie, however, disaster has not been entirely avoided. Monolith No. 5 is possessed of an irregularly shaped base, and it lacks a pointed apex. It is plainly an unbalanced stone, and the result is that it has heeled over to an angle of 43° , which is the position in which it now lies. Monoliths Nos. 7 and 8 also possessed rough, irregularly shaped bases, but here extraordinary precautions have been taken to avoid the fate of No. 5. Actually, neither No. 7 nor No. 8 rests upon the gravel bed at all, but instead a foundation of large stones has been prepared for each one, and these stones take the whole weight of the monoliths resting upon them. All this proves that the builders of the circle were well experienced in such matters, and they took some care in the choice of a monolith, and also in its erection to ensure its stability.

The dimensions of the various monoliths are as follows:—

	Height above Floor.		Total Length.		Greatest Thickness.	
	ft.	in.	ft.	in.	ft.	in.
Monolith No. 1	4	1	5	0	2	5
2	4	0	5	0	2	1
3	4	5	0	0	2	4
4	4	4	5	9	2	8
5	3	7	5	9	2	2
6	3	7	5	6	2	6
7	4	5	6	2	3	3
8	5	11	6	8	2	8

The stone circle is said to have once possessed an outlying stone.¹ This stone was supposed to have been an upright block about 5 feet in height, and to have stood on the western side at a distance of 3 or 4 yards from the circumference of the circle.

Subsequent to my departure, the Ancient Monuments Department had an area 20 feet long examined up to a radius of 36 feet from the centre of the circle—a distance of 20 feet from the circumference—on the western side. The former existence of a monolith of the size stated would imply the presence of a crater: but, although the gravel was carefully scraped throughout the above area, none was found. Everywhere the gravel bed remained undisturbed. It is rather a significant fact that Logan's drawing omits such an outlier. If, as Mr Ritchie states, the stone was in existence within living memory, Logan would undoubtedly have included it in his plan. Possibly the stone may have been the last remnant of the "nine others of similar dimensions"—meaning small ring cairns—which are stated by him to have been situated at a short distance to the south-west of the circle. In any case, no monolith of the size stated by Mr Ritchie could have stood on the western side.

REPORT UPON THE SKELETAL REMAINS FROM THE STANDING STONES OF CULLERLIE, ECHT.

By Professor ALEXANDER LÖW, M.A., M.D.

Cairn No. 1.—Cremated bone consisting of about 150 fragments of limb bones, varying from about $\frac{1}{2}$ to 1 inch in length. In addition, there are 20 pieces of the flat bones of skull varying in size from $\frac{1}{2}$ an inch square to the largest, 2 inches by $\frac{3}{4}$ inch: among the pieces can be identified human parietal and a small part of left upper jaw.

Cairn No. 2.—Cremated bone consisting of 15 fragments of limb bones, mostly small— $\frac{1}{2}$ to 1 inch in length.

Cairn No. 3.—Cremated bone consisting of 10 fragments of limb bones—from $\frac{1}{2}$ to $1\frac{1}{2}$ inches in length.

Cairn No. 4.—This specimen largely consists of peaty material with a few fragments of cremated bone embedded in it: one fragment is a piece of human parietal bone.

Cairn No. 6.—One packet consists of about 30 very small fragments of cremated bone. The other packet contains some 40 pieces of cremated bone splintered and varying in size from $\frac{1}{2}$ to 1 inch in length.

¹ J. Ritchie, "Notes on Stone Circles in South Aberdeenshire," *Proc. Soc. Ant. Scot.*, vol. liii, p. 66.

THE BARONY. CASTLE, AND CHURCH OF ROTHIMAY. 223

REPORT UPON THE CHARCOAL.

By E. V. LAING, M.A., D.Sc.

I have examined the specimens of charcoal, and find them to be as follows:—

Cairn No. 1	.	.	.	Oak (slow grown)
.. .. 2	.	.	.	Hazel
.. .. 3	.	.	.	Oak
.. .. 4	.	.	.	Oak (hard, almost woody)
.. .. 5	.	.	.	Oak
.. .. 7	.	.	.	Oak
Floor of circle	.	.	.	Willow

V.

THE BARONY, CASTLE, AND CHURCH OF ROTHIMAY. By W. DOUGLAS SIMPSON, M.A., D.LITT., F.S.A.Scot.

HISTORICAL INTRODUCTION.

One of the most remarkable facts that strikes the student of Scottish historical topography is the continuous nature of its development. Despite the successive waves of racial immigration and cultural influences, and the numerous and often severe political revolutions and devastating wars through which the country has passed, the local centres of Scotland's population have remained in most cases surprisingly constant—even from a period so far back as the Age of Bronze. I have elsewhere discussed the significance of this phenomenon, as observed in the district between the Dee and the Spey; and have analysed special instances of its occurrence, as at Inverurie, Midmar, Auchindoir, Essie, and Auchterless.¹ In the present paper it is proposed to deal with another very striking example, at Rothimay on the left bank of the Deveron, in Banffshire. Here the evidences of continuous human occupation and of local political and religious importance, from the Stone Age down to modern times, are unmistakable and highly significant.

Rothimay is a district (see map, fig. 1) that offered many advantages

¹ See *Scottish Notes and Queries*, 3rd series, vol. ii, pp. 39–42; *Proceedings*, vol. lxiii, p. 111; vol. lxiv, pp. 48–52; vol. lxvi, pp. 86–8. Cf. also *ibid.*, vol. lxv, pp. 115–7, and *Journ. Brit. Archaeol. Assoc.*, November 1932, p. 143; also my *The Celtic Church in Scotland*, p. 66, note 1.

to a primitive population, and was sure of being early settled. It consists of a gently sloping plateau descending, southwards and westwards, into the valleys of the Isla and the Deveron. The basins of these two rivers to-day form the finest agricultural land in the parish; but in ancient times what are now fertile haughs would have been largely swamp, and the traces of prehistoric inhabitation are for the most part found on the slopes above, which combined shelter from the north and a warm sunward outlook with natural drainage, while not being so steep either to run off all surface water too rapidly or to prevent good and deep soil from accumulating. The native granites (gabbro and norite) are mostly overlaid by a tough species of boulder-clay known in the north country as "pan," obstinate and impermeable; and where this is near the surface the soils are waterlogged and farming is poor, but as a rule the inhospitable clay is overlaid by a sufficient depth of good, kindly arable soil. Four extensive peat mosses, all still worked—Moss of Rothimay, Rowan Bauds, Moss of Mayen, and Craigbourach Moss—afford an ample ready-to-hand supply of fuel;¹ and no doubt in primitive days (as indeed the remains in the peat bogs show) large areas of the country were under forest. Such woodlands would shelter an abundant supply of game, and the two rivers, then as now, must have been well stocked with salmon, eel, and trout.

It is hardly to be conceived that a locality so favoured could have failed to become populated, as soon at all events as hunting gave place to agriculture as the staple industry of Scotland. Weapons and implements of the Stone and Bronze Ages do not seem to have been frequently picked up in Rothimay, but sites of flint industries exist at Inchcoursie and Clashmanhillock. The presence of Bronze Age man is sufficiently vouched for by the great assemblage of round cairns found on the ridge including Hill of Retanach (871 feet, the highest ground in the parish) and Hill of Cairns (800 feet).² And that Rothimay must have become

¹ The *Old Statistical Account*, published in 1797 (vol. xix. p. 385), records that at this date a great part of the town of Huntly, 6 miles distant, was supplied from the Rothimay peat moss. This moss is still extensively worked, the tenants on the Rothimay estate having each his "lair." The peat cuttings are most impressive, being as much as 10 or 12 feet deep, and showing in their middle and lower levels roots and stumps of Scots pine (*Pinus sylvestris*) many of which have the appearance of having been burned.

Craigbourach Moss, which is not shown on the map (fig. 1), is about a mile north of Conjure Cairn.

² The O.S. Map (6-inch. Banffshire, Sheet XV.) shows some forty cairns or sites of cairns on the wooded ridge between Gallowhill and Moss-side of Mayen. These are mostly now submerged in vegetation, but seem on the average to have been about 18 feet in diameter. The largest cairn that I have inspected in the district is the one known as Conjure Cairn, in the strip of rough wooded ground immediately north-west of the farmhouse of Mid Knauchland. This cairn is now plundered to a mere foundation and covered with grass, but the well-marked kerbstones enable the diameter to be fixed at about 33 feet.

an important centre towards the close of this period is shown by the fragments of what has undoubtedly been one of the largest stone circles in the north-east. When complete it will have measured fully 80 feet in diameter, but only four of the pillar stones now remain, besides the splendid recumbent stone, about 14 feet in length, with its fine series of cup-marks, some of them ringed. This circle belongs to a type peculiar to the district between the Dee and the Spey, and characterised by the presence on the southern (generally the south-western) segment of the circle of a large horizontally placed or recumbent stone set between two of the pillars. At Avochie on a great whinstone boulder is another remarkable series of cup-marks, also including a number of ringed ones.¹

Naturally the first Christian missionaries would make their way to the already existing centres of population, and in the north-east there is frequent evidence that the early chapels or cells were planted at or near the stone circles of the old pagan faith. At Rothiemay, however, St Drostan, Abbot of Deer in Buchan in the sixth century, ignored the heathen temple high-perched on the brae above, and built his church on the broad haugh alongside the Deveron.² Celtic ecclesiastical sites again and again show a preference for such a *machair* or flat alluvial plain by the side of running water. It is true that no Celtic sculptured cross or other positive evidence exists to prove that the old church site at Rothiemay is the actual spot where Drostan fixed the first focus of Christian worship. But the place is so typical of old Celtic religious sites, and the persistence of the name of its founder, Drostan, is so characteristic of Celtic practice, as to render it very likely that this is the case. In the later days of the medieval Church the memory of the old Celtic missionaries, whose names so staunchly clung to the chapels they had in most cases personally founded, often tended to become obscured by dedications to saints in the Roman hagiology. At the parent monastery of Deer, in the twelfth century, we thus observe a tendency to submerge the memory of its founder, St Drostan, by an invocation of the Apostle Peter: and so also here at Rothiemay it is significant to find that a little above the old church site is a spring known as St Peter's Well.³

About a century after St Drostan's time we find traces of the presence

¹ For the Rothiemay circle see *Proceedings*, vol. xxxvii, pp. 133-7 and 227; vol. lii, pp. 104-8; G. F. Browne, *Antiquities in the Neighbourhood of Dunceth*, pp. 160-2. The Avochie cup-marks are described and illustrated in *Proceedings*, vol. xl, pp. 318-20, and vol. lii, pp. 114-5.

² The O.S. Map makes an extraordinary mistake in showing the old church on the *east* side of the Kirktown Burn.

³ See on this subject my *Historical St Columba*, 2nd ed., pp. xxvii, 38. A dedication to St John is hinted by the author of the "Description of the Parish of Rothiemay," *circa* 1726 (*Int. Aberdeen and Banff*, vol. ii, p. 225).



Fig. 2. Symbol Stone at Tillytarnmont.

of another Celtic missionary in Rothiemay at the sites known as St Knauchland's Kirk and St Knauchland's Well, immediately to the south of the farm-steading of Mid Knauchland. These are evidently foundations of St Nachlan or Nathalan, of Cowie, Bethennie, and Tullich (near Ballater), the date of whose death is given in the Irish Calendars

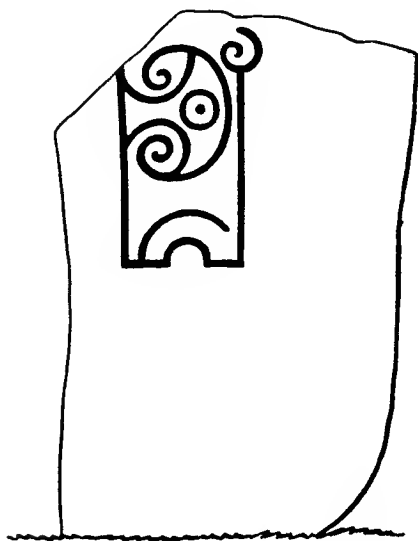


Fig. 3. Symbol Stone from North Redhill.

as 8th January 679.¹ Inchcorsie, just east of Rothiemay Castle, and Mannoeh Hill to the north-west, are place-names which tell of the early ecclesiastical associations of the locality. Near Rothiemay railway station, but in the parish of Cairnie, is Tillytarmont, spelt in 1534 Tilntermend, which is explained to mean "girth hill";² and built into the wall of the farm-steading here is one of those mysterious sculptured symbol stones (fig. 2) that mark the dim borderland between paganism and Christianity. The stone shows the bird, mirror, and mirror-case symbols, and is about 3 feet 8 inches high.³ Its base seems to end in a kind of tenon, as if it had been designed to be fixed in a stone socket; and this fact, coupled with the name Tillytarmont, raises the possibility that such sculptured stones may have sometimes served, like the later girth-crosses, for sanctuary boundaries. On the terrace along the south front of Rothiemay Castle another sculptured symbol stone (fig. 3) is preserved, which came originally from North Redhill, on the opposite side of the Deveron. It shows a rectangular symbol with spiral ornamentation.⁴

THE BARONY OF ROTHIEMAY.

During the Anglo-Norman penetration in the twelfth and thirteenth centuries the old Celtic centre of population at Rothiemay was organised

¹ See my *Origins of Christianity in Aberdeenshire*, pp. 27-30; also W. J. Watson, *Celtic Place-Names of Scotland*, pp. 308, 329-30.

² Watson, *op. cit.*, p. 259.

³ J. Stuart, *The Sculptured Stones of Scotland*, vol. ii, pl. cix., and Notices of the Plates, p. 63; J. Romilly Allen and Joseph Anderson, *The Early Christian Monuments of Scotland*, pt. iii, p. 185; G. F. Browne, *op. cit.*, pl. xlv., and p. 143.

⁴ Allen and Anderson, *op. cit.*, pp. 154-5.

into a manor or barony and parish with associated church and castle sites in the normal medieval fashion. But here once again, as so often in the north-east, continuity seems to have been preserved even amid all the great and complex series of changes involved in the infeudation of Scotland. The medieval parish church, if my reading of the phenomena be correct, remained on or near the site of St Drostan's early chapel; and the castle was set on the bold green bluff overlooking it, and commanding the ford of the Deveron and the ancient north road, leading thence along the haugh and up the under-slopes of Mayen Hill. Here again the *ensemble* is thoroughly typical: for I have elsewhere shown that in the ancient Celtic province of Mar, as also in the district on the sunward side of the Mounth, the early Norman castles are constantly found to be placed so as to command the great cross-country routes.¹ Though now much obscured by the later stone-and-lime buildings, the stance of the castle, as seen from the haugh below, still appears to retain something of the mounded character common to Norman strongholds, and it is quite likely that it should be classed as a *motte*. The name Rothimay is said to signify the "rath or fortress of the plain."² a description which sufficiently applies to the stronghold dominating the broad haugh of the Deveron.

Few and scanty records have survived as to the early Norman or Normanised lords of Rothimay. The place seems first to occur in history in the year 1264, when the Exchequer Rolls record that the lands of Rothymayng are escheated to the Crown.³ They appear to have remained in the royal hands until as late as 1291, in which year it is stated that their rents had been assigned by King Alexander III, as part of the tocher of his daughter, the Princess Margaret, to King Eric of Norway.⁴ King Robert Bruce granted the lands successively to Murdoch Stewart, Earl of Menteith, and to David de Barclay;⁵ and on 22nd November 1345 David II, bestowed them on his faithful adherent, William de Abernethy, for the annual service of three suits at the head courts of Banffshire, and the payment when required of a pair of gilt spurs yearly to the King at Rothimay on Whitsunday.⁶ This charter reveals that the lands of Rothimay had been forfeited by David de Strathbogie, Earl of Atholl, who had been a partisan of Edward Balliol

¹ *Proceedings*, vol. lxiii, pp. 102-38; vol. lxv, pp. 115-7.

² Watson, *op. cit.*, p. 501.

³ *Exchequer Rolls of Scotland*, vol. i, p. clxxxi.

⁴ *Documents Illustrative of the History of Scotland, 1286-1306*, ed. J. Stevenson, vol. i, p. 313; cf. J. Taylor, *Edward I. in the North of Scotland*, pp. 57-9.

⁵ *Reg. Magni Sigilli Regum Scotorum, 1306-1424*, app. ii., Nos. 384, 513, 663.

⁶ *Op. cit.*, No. 1004; Sir William Fraser, *The Frasers of Philorth*, vol. ii, p. 296. For a case in point of this *reddendo* being made, anno 1456, see *Exchequer Rolls*, vol. vi, p. 172.

and was killed at the battle of Culblean, 30th November 1335.¹ How Atholl had come into possession of Rothiemay I do not know. It remained in the hands of the Abernethies—since 1445 Lords Saltoun—until 1612,² when it was purchased from the eighth Lord Saltoun by Sir James Stewart of Killeith,³ afterwards created Lord Ochiltree, who in his turn sold the barony five years later to John Gordon of Cairn-burrow,⁴ by whom it was made over to his son William, the first Gordon laird of Rothiemay. The Gordons "had the gnidin' o't" at Rothiemay until 1712, when, having got into financial difficulties, they sold the property for £101,751. 5s. Scots to Mr Archibald Ogilvie,⁵ a son of Lord Boyne. In 1741 it was acquired by William Duff, Lord Braco, afterwards Earl of Fife,⁶ who resided there with his numerous family for many years. The old Countess died there in 1788. The Fifes remained in possession until in 1890 the estate was purchased by Lieut.-Colonel John Foster Forbes, father of the present laird, Lieut.-Colonel Ian Rose Innes Joseph Forbes, D.S.O.⁷

Specific mention of a castle of Rothiemay is absent from the early records, and the oldest reference to it appears to be in John Hardyng's map of Scotland (*circa* 1465), which marks the "castels of Strabolgy, of Rithymay, of Dony Dowre (Dunnideer)." ⁸ As the other two castles of this trio both show masonry assignable to this period, or older, it is probable that Rothiemay also had become a stone-and-lime fortress by the date when it was considered important enough to be marked with them on Hardyng's map: and indeed it is quite likely (as we shall see) that the oldest portion of the structure now remaining, namely, the massive eastern wing, may belong to the fifteenth century. In the writs of the sixteenth and seventeenth centuries it is referred to variously as the "castle," "fortalice," "tower," "tower and fortalice," "house and fortalice," "place," or "house" of Rothiemay: the last-mentioned

¹ See *Proceedings*, vol. lxiv, pp. 201-11.

² One of the Saltoun lords of Rothiemay fell at the "Red Harlaw," 24th July 1411, as recorded in the old ballad:

"The Lord Salloun of Rothemay,
A Man of Micht and mekle Main,
Gint Dolour was for his Decay,
That sae unhappye he was slain."

³ *Frasers of Philorth*, vol. ii, p. 66; *Reg. Magni Sigilli*, 1609-20, No. 898.

⁴ *Reg. Magni Sigilli*, 1609-20, No. 1598.

⁵ A. and H. Taylor, *The Book of the Duffs*, vol. i, p. 112; see also *The Ogilvies of Boyne*, by the same authors, pp. 62-6. *Ibid.*

⁶ Good though undocumented summaries of the history of Rothiemay will be found in *Notes, Historical and Ecclesiastical, on the Parish of Rothiemay*, by D. Shearer (1886), and in *Rothiemay House*, by W. Cramond (1900).

⁷ *Facsimiles of National MSS. of Scotland*, pt. ii., No. lxix.; *The Chronicle of John Hardyng*, ed. H. Ellis, pp. 417, 418.

designation became usual in the time of the Earls of Fife, but the more ancient and appropriate style of "castle" has been revived under the Forbeses.

On 3rd September 1562 Queen Mary, then on her northward expedition that terminated in the defeat of the Gordons on the field of Corrichie, spent a night at Rothiemay.¹ The room in which she is said to have slept is still pointed out on the first floor at the north end of the east wing. In most Scottish houses where Queen Mary passed a night, such a room is shown for the edification of visitors: and it may be suspected that in many cases the ascription is an apocryphal one, dating from that revival of interest in the tragic Queen which was a by-product of Sir Walter Scott and the Romantic Revival. But at Rothiemay "Queen Mary's Room" was known at least as far back as 1797,² and it is therefore by no means improbable that the tradition here may be a genuine one. The baron of Rothiemay at the time of the young Queen's visit was Alexander Abernethy, sixth Lord Saltoun, who afterwards took part in the overthrow of the Gordons at Corrichie: an act that had unfortunate consequences for the Rothiemay lands which lay within such easy reach from the Gordon headquarters at Strathbogie, for in 1568 Lord Saltoun and other northern barons reported to the Privy Council that "thair landis, rowmes, and possessionis wer and ar in utter perrell and dangeir to be invaidit and persewit with fyre, swerd, and all uther kynd of hostilitie be George, Erll of Huntlie, his assistaris and complices."³ Whether any scathe was done to the castle at this time we do not know.

In 1578 the Castle of Rothiemay seems to have figured as a State prison, for hither apparently was sent, at the behest of Lord Ruthven, who had recently "cleaned up" the Border rievvers, one Archie Batie, brother of John of the Scoir, "to be suirlye keipit unlettin to libertie or sufferrit to pass hame." Despite these stringent instructions Archie soon vanished and Lord Saltoun had to procure himself a special exoneration from the Privy Council.⁴

In 1601 the plenishing of the "place and fortalice" of Rothiemay

¹ *Proxima nos ad Rothimatum Abernethiorum villam satis tranquille transacta est*—Buchanan, *Hist. Scot.*, bk. xxvii. (ed. 1700, p. 488a). Cf. Ogilvy's *Diurnal of the Queen's Journey* (MS. in Nat. Lib.), printed in *Banffshire Journal*, 9th April 1935, p. 2: "The 2nd she left Balquham after dinner and supped and slept at Rothiemay. The 3rd she set out after dinner from Rothiemay and supped and slept at Grange in Strathisla." The artillery demanded from Lord Huntly at Strathbogie was directed to be sent to Rothiemay, and thence to Banff. See *Accounts of the Lord High Treasurer*, vol. xi. pp. 201-2.

² *Old Statistical Account*, vol. xix. p. 386.

³ *Reg. Privy Council*, vol. i. (1545-69) p. 645. For the interesting letter sent from Rothiemay, 23rd August 1570, to the Regent Morton by Lords Saltoun and Pitsligo, see *The Frasers of Philorth*, vol. ii. p. 59.

⁴ *Reg. Privy Council*, vol. iii. pp. 42, 62.

included a "cupboard of silver work."¹ In 1618 the "place of Rothiemay" figures in a curious altercation between George Gordon of Gicht and Patrick Livingston of Inchcoursie. The quarrel had to do with the will of Dame Margaret Stewart, Lady Saltoun: Gordon attacked Livingston bitterly "for suffering hir to mak ony testament . . . alledgeing that all scho had wes his birth-right, and that no utheris had interesse thairto." After the dispute had gone on for some time the laird of Gicht, on 14th May, made an attempt to surprise Livingston at Rothiemay. "quhair he hes dwelt thir sax yeiris bigane." "Being walking in quiet maner afore the yet." Livingston "wes almoist surprysit of him, and with grite difficultie relevit him self within the house. The yettis quhairof being closed and locked, he chopped very rudlie at the yet, crying and schouting unto the said Patrik to come furth, that he nicht have his haire blood." Livingston carried the matter to the Privy Council, by decree of which the wild laird of Gicht was placed under lock and key in Edinburgh Castle.²

The next occasion on which Rothiemay Castle emerges on the stage of history is in connexion with the mysterious tragedy of the burning of Frendraught on 8th October 1630, in which William Gordon of Rothiemay was one of those who lost their lives. For long the Crichtons of Frendraught had been at daggers drawn with their neighbours of Rothiemay concerning some disputed fishing rights upon the Deveron; and Lady Frendraught was accused by the Gordons of having caused the fire in which the laird of Rothiemay had perished. The Gordons therefore engaged a party of Highlanders, who obtained from Lady Rothiemay, mother of the burned laird, the use of "the hous and castle of Rothemay, which they doe fortifie with meat, men, and munition: and from thence they make daylie incursions against Frendret, and kill some of his men."³ Unfortunately these Highlanders, zealous fellows, soon displayed a tendency to carry on plundering operations on their own account, and did not bother to draw any fine distinction among their victims between those who paid them and those against whom they had been engaged to serve. And so on one occasion they expelled Lady Rothiemay and her daughters from the house "schot the lady with hir dochteris to her owne yit to ane kilbarne quhair they remanit" - and held high revelry in "this strong hous" until the advent of the Sheriff-Principal of Banff, George Baird of Auchmedden, at the head of 200 men, forced them to quit: but as soon as the representative of law and order had departed "they cam all back agane to Rothimay, quhair

¹ Cramond, *op. cit.*, p. 13.

² *Reg. Privy Council*, vol. xi, pp. 395-9.

³ Sir Robert Gordon, *Genealogical History of the Earldom of Sutherland*, p. 475.

they held houss in wonted forme." ¹ Lady Rothimay was accused of having acted collusively with the rieviers, and in the beginning of 1635 the Privy Council sent a herald charging her to render up the castle, which she did; but almost immediately thereafter a party of Gordons "cam back agane to Rothimay, strak wp the yetis and durris, and duelt thairin noblie. Bot in the meintyme letteris of intercommoning is proclameit aganis thame, quhairby as thay war lawless so maid freindless and sua micht not byd togidder, thairfoir thay pairtit the pelf amongis them, kest wp the yettis of Rothimay and ilk man to do for himself, and pairtit company vpone the 23rd of Januar." ² The Sheriff of Banff now (2nd April 1635) took possession again and garrisoned the place with "powder, bullet, and 24 souldiours" at Lady Rothimay's expense.³ She herself was sent a prisoner to Edinburgh, where she lay for nearly two years. Her trial before the Privy Council gives a vivid description of the "heirschipis, reiffis, oppressiones, and depradations committed be licht horsemen of the name of Gordoun and utheris upon the laird of Frendraucht and his tementis." The description of the manner in which the rieviers, with or without the lady's consent, shared the house between her and themselves is interesting. They "pairtit the place betwix thame, the on side of the closs to thame, and the uther to the lady." This suggests a building on the courtyard plan, with two lateral wings. The lady, it was alleged by her accusers, was so well pleased with the raiders' successes against the Frendraughts "that at Christmas thaireftir schoe dancit with the licht horsemen in the place of Rothimay the cusheoun dance upon her schoulder." Her trial was terminated by a personal appeal on her behalf to King Charles I., who in a letter written from Whitehall on 14th February 1637 directed the Privy Council to set her at liberty upon sufficient sureties.⁴

On 30th October 1644 the "place of Rothimay," then held by the Covenanters, was captured and plundered by Montrose on his march from Fyvie *via* Turriff to Strathbogie.⁵ In August 1651 it opened its gates to an English garrison, which remained in possession for at least

¹ Spalding, *Memorialls of the Troubles*, vol. i. pp. 51, 55.

² Spalding, *ibid.*, vol. i. p. 59.

³ The Sheriff, however, considered himself out of pocket to the extent of "nyne hundreth fourescore three pundis nyne shillings of his owne proper moneyes, by and attour the charge of the taking and transporting of the Ladie Rothimay, and others rebellis, fra time to time, as alsua in the persute and searching for the brokin men and others employments, as his Majesteis service required." These moneyes were allowed to him by resolution of the Privy Council, 28th July 1635 (*Reg. Privy Council*, 2nd series, vol. vi. p. 73).

⁴ For all these wild doings see *Reg. Privy Council*, 2nd series, vol. iii. pp. 255-7, 429-31, 485-6, 496, 509-10; vol. iv. pp. 241-5, 333-4, 654-5, 671-2; vol. v. pp. 439-43, 446, 449, 515-7, 635; vol. vi. pp. 19, 42, 46-7, 73, 88-9, 343, 395, 400, 666. Cf. also Spalding, *op. cit.*, vol. i. pp. 432-7.

⁵ Spalding, vol. ii. p. 426.

two years; and the presence of these Puritan soldiers, of whose saintly qualities Macaulay's robust and partial imagination has painted in a famous passage such a golden picture, was productive—here as elsewhere in Scotland—of the most disastrous results in the morality of the servant girls of the neighbourhood. "Scandalouse carriadge with the English souldiours quartered in the Castell" gave the Kirk Session of Rothiemay ample, and no doubt pleasant, opportunity during these years for the exercise of their inquisitorial powers.¹

On 23rd March 1780 Lord Fife's sub-factor, Alexander Stronach of Knock, wrote the following letter to his chief, William Rose, who resided at Montcoffer House but was then at Edinburgh:—²

... "I am sure you behooved to stop upon the Thursday after we parted as the wind blew wt great violence and occasioned much damage all over the country, but with still greater excess on Saturday last. The first tirr'd several parts of the house of Rothiemay, not only the old tower but likeways great part of the south side which was increased on Saturday. Lady Fife proposed that I should aply to ye Earl or you for direction to make the necessary repairs on his Lp's expence, as she considers herself only lyable for tear and wear but not for the effect of Hurrycanes and she expects she will be relieved accordingly. In ye mean time she is prepareing materials and has bespoke workmen and did not propose my takeing any concern until I receive particular directions. I told her I did not inclyne to trouble my Lord on ye subject at this time but promised to lay ye case before you."

Little seems to have been done at that time, but in 1795 the Earl himself visited the place, and writes in high wrath about the state into which it had been allowed to degenerate by the tenant. "I was yesterday at Rothiemay, nothing can describe the Stile Mr Gecky has the House in. He has taken out the Windows out of the Library. It will drive it to ruin. It is lucky I went. I shall get him out of it directly and get that part made watter tight, pull down the old side as the roof in some parts is fallen in." ³ That Lord Fife carried out his intention, and

¹ For details see extracts from the Session Records in Gordon, *History of Scots Affairs*, App. to Preface, pp. lvii–lix; also Shearer, *op. cit.*, pp. 23–5. By contrast the passage from Macaulay is worth quoting, as showing how a great historian's prepossessions combined with his golden-mouthed eloquence to delude his readers into a conception of the Roundhead soldiery which the slightest acquaintance with the parochial records of Scotland during the Protectorate would have served to dispel. "But that which chiefly distinguished the army of Cromwell from other armies was the austere morality and the fear of God which pervaded all ranks. It is acknowledged by the most zealous Royalists that, in that singular camp, no oath was heard, no drunkenness or gambling was seen, and that, during the long dominion of the soldiery, the property of the peaceable citizens and the honour of woman were held sacred. . . . No servant girl complained of the rough gallantry of the redcoats. . . . Not an ounce of plate was taken from the shops of the goldsmiths"—*Hist. of England*, ed. T. F. Henderson, p. 32.

² Extract from the original letter kindly furnished by Miss Henrietta Tayler.

³ A. and H. Tayler, *Lord Fife and his Factor*, pp. 260–1.

without delay, we learn from the *Old Statistical Account*,¹ published two years later, wherein it is stated that "the most ancient part of the house, which was fast going to ruin, his lordship has lately taken down, and has repaired and furnished the rest in a manner which does honour to his taste."

THE CASTLE.

Rothiemay Castle (see plans,² fig. 4) consists to-day principally of two long ranges, set at right angles, south and east. These ranges represent the portions of the ancient building that have survived: and to both additions have been made, apparently in course of the reconstruction initiated by Lord Fife after 1795. I am informed by Miss Henrietta A. Tayler that the alterations were mainly effected by her grandfather, Major Alexander Francis Tayler, who was granted a lease of Rothiemay House in January 1809, when his wife's father became the third Lord Fife.

The addition to the south range consists of a new front facing north, and containing on the ground floor the present library, with a triple bow-window looking north, and on the west side a semi-round tower rising through the full three storeys of the building. The bow-window was inserted by Major Tayler, and the rest of this building is doubtless Lord Fife's work. As originally designed, or altered by Major Tayler, it included a pillared entrance porch, and the new front terminated with a broad, low-pitched gable looking north, having a crocketed pinnacle on either side, and prolonged eastward with a quasi-classical balustrade, part of which still exists. The addition made about the same time to the east range consists of a two-storeyed transverse wing set across the north end of the range, like the head of a T, and having a bold semi-round tower in the centre. This tower was originally capped by a balustrade with crocketed pinnacles, all similar in design to the corresponding features on the addition to the other range; but the balustrade has now been taken down, though the pinnacles remain. The transverse wing finishes at either end with plain gables, and its roof is lower than that of the ancient east range, which overrides it and finishes in a semi-conical helmet to the round tower, this helmet rising into a pyramidal peak in a quaintly picturesque manner.³ An important addition to

¹ Vol. xix, p. 386.

² In view of the fact that the old masonry is everywhere covered externally by harl and internally by panelling, and the difficulty which consequently exists about identifying precisely the work of different periods, it has been deemed inadvisable to attempt a dated plan. The general sequence of building will be understood from the text.

³ The appearance of the mansion, as thus remodelled at the beginning of the nineteenth century, is shown in an old lithograph reproduced in *Lord Fife and His Factor*, p. 260.

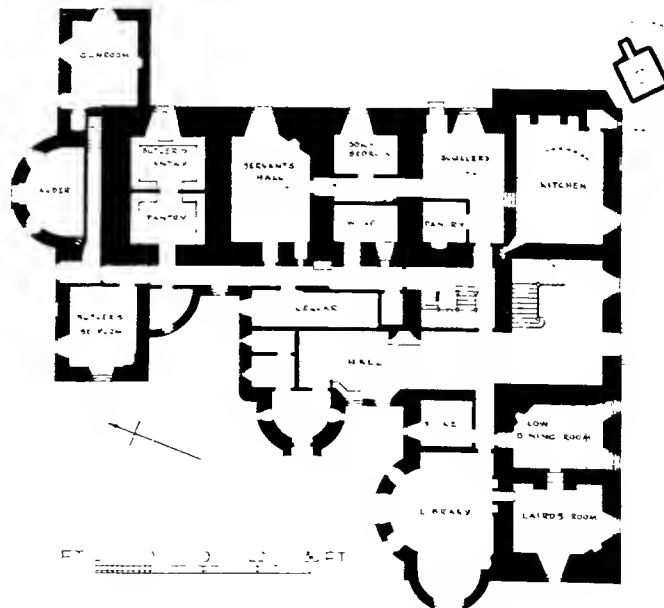
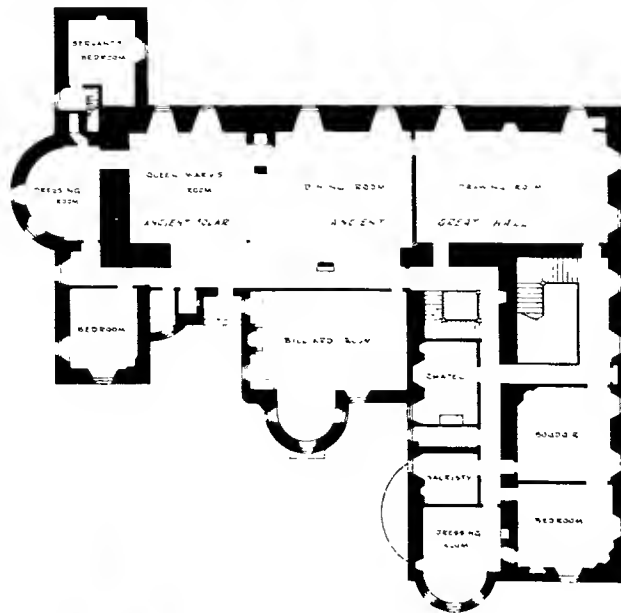


Fig. 4. Rothiemay Castle: Plans.

the building, consisting of the tall porch tower in the re-entrant angle of the two ranges, was made by the late Colonel Foster Forbes in 1901. This very effective tower (fig. 5), which ties the whole sprawling architectural composition of the house together, is reminiscent, with its corbelled cap-house and pointed stair turret, of a similar building, dated 1602, at Ballindalloch Castle, and was designed by Mr A. Marshall Mackenzie, LL.D., R.S.A., F.S.A.Scot., of Aberdeen. The same architect carried out a still further improvement upon the



Fig. 5. Rothiemay Castle: view from north-west.

castle in 1912: this latest work consists of the segmental turret, with bathroom and other accommodation, inserted in the angle between the ancient east range and the west limb of Major Tayler's addition.

Of the two ancient ranges the south one measures 88 feet in length and 22 feet 6 inches in breadth. It has been built across the south end of the eastern range, which is older and more massive in construction, and measures about 74 feet in length and 28 feet 9 inches in breadth. In both ranges the basement consists of a series of tunnel-vaulted offices; but, whereas in the south range the walls are for the most part only 3 feet thick, in the east range they reach a thickness of about 5 feet on the outer side and over 4 feet on the inner or courtyard side. Also the three main cross-walls dividing the cellars in the east range are of great

strength, being about 4 feet 6 inches thick; the southmost cross-wall, dividing the scullery from the kitchen at the east end of the south range, is much thinner (2 feet 2½ inches), and clearly belongs to the same period as the south range. The eastern vaults also are rather lower, only about 8 feet to 8 feet 6 inches in height, as compared with 9 feet to 9 feet 6 inches in the southern range. But the two western vaults of the latter are of more massive construction, and doubtless are older than the rest of this range. On the first floor the east range contains, from south to north, the present drawing-room, dining-room, and "Queen Mary's Room." The dining- and drawing-rooms are separated only by a light partition (inserted by Major Tayler) and originally formed one great hall, measuring 63 feet 4 inches by 20 feet 4 inches, to which "Queen Mary's Room" seemingly formed the solar, its dimensions being 22 feet by 20 feet 4 inches. At the south-east corner of the hall a service stair or hatch, traces of which still exist, established connexion between the screens and the kitchen below. Originally in both ranges the cellars appear to have opened directly on to the courtyard, and the rooms above were reached one from another in the old "through-going" Scottish manner. The present corridors along the eastern range on the ground and first floors were added by Major Tayler, by whom also the vault in the south range next the kitchen was cut out, and the present wide open main stair constructed, which with its balustrade and fine landing forms a dignified internal feature of the castle. During the alterations of 1901 a wooden service stair on the scale-and-platt design—also part of Major Tayler's work—which occupied a position immediately north of the library, was removed, and its place taken by a storeroom on the basement level and toilet accommodation above (as shown on plan); the present service stair was built to the north of the main stair, and the corridor and straight flight of steps were inserted between the larder and the ancient outer end wall of the east wing, so as to provide internal access to the bedroom on the first floor of the eastern limb of the T-annexe. The window in the south wall of the laird's room on the ground floor was slapped out at the same period.

The eastern range is now only two storeys in height, and has evidently been cut down: its roof mitres into that of the south range, which is of three storeys, and presents (fig. 6) an impressive example of the symmetrical and rather severe designs that came into vogue in Scotland after the Restoration. Midway in the wall-head line is a semicircular gablet with a void for a clock and a chimney perched atop. The gables are not crow-stepped and have plain skewputs, upon which in the alterations of the Duff period crocketed pinnacles have been imposed. On

the ground floor in the centre of the composition is a T-headed freestone door with late bolection mouldings. The windows are in freestone and uniformly show a $2\frac{1}{2}$ -inch chamfer: that of the laird's room still retains its caged grille of interlocking bars, the mode of intersection being reversed in diagonally opposite quarters in the usual Scottish manner.

Only two of the windows in the east range, namely those lighting "Queen Mary's Room," are old: they are in freestone and show a $3\frac{1}{2}$ -inch chamfer. A poor and incorrect water-colour drawing by the Rev. Charles Cordiner, done before 1780, now in the possession of Lord Carnegie, preserves the appearance (though in very bad perspective)



Fig. 6. Rothiemay Castle: view from south.

of this range before the Duff alterations: then, as now, it was only two storeys in height, and terminated northwards in a crow-stepped gable.

As to dates, in the absence internally of distinctive architectural features, and as the walls are all either plastered or panelled, it is difficult to speak with any certainty. The south range, however, is plainly an addition. With the exception of the two massive older cellars at its west end, it seems to be uniform throughout its height, and its symmetrically planned external details point to a date in the latter part of the seventeenth century. The east range is clearly more ancient, and may not impossibly be as old as the latter part of the fifteenth century. In its general design it recalls the "palace" added about this period to the neighbouring castle of Huntly. The heavy chamfer found on the windows of "Queen Mary's Room" is very common in the later fifteenth century, though found also both earlier and later. I suspect that the builder of the east range may have been William Abernethy, second Lord Saltoun, who was the first of his line to make Rothiemay his definite

headquarters, as appears from a crown charter that he obtained on 10th January 1482, gathering all his scattered lands—which lay in the shires of Banff, Angus, Fife, Stirling, Midlothian, East Lothian, Berwick, and Roxburgh—into one free barony, to be known as the barony of Abernethy, the service for which was to be done at the Sheriff Court of Banff, evidently because he had made Rothiemay his chief residence.¹ It is probably significant that in the next Abernethy charter after this date (issued on 9th March 1491)² specific mention is found, for the first time so far as I know in charter evidence, of the *castrum de Rothiemay*. At this time the place was sometimes styled Abernethy in Rothiemay, the Saltouns evidently desiring to transfer that name to their new capital messuage—in the same way as their neighbours the Gordons, with greater success, brought the name Huntly from Berwickshire to Strathbogie.

In the bow which now caps the north end of the east wing is a remarkable doorway (seen to the left in fig. 5). It is in granite and round-arched, with quasi-classical mouldings, and the keystone shows an angel's or cherub's head with outspread wings. This doorway has clearly been derived from elsewhere, and when built into its present position was heightened by the insertion of a sandstone course midway in each jamb. Originally the height had been about 7 feet 8 inches, and the width is 3 feet 6 inches. It seems to date from the late seventeenth century, and probably came from the old parish church.

There still exist three stones which had formed portions of a dormer window or windows. One of them appears to show part of the Forbes arms and the motto SALUS PER [CHRISTUM]; the other two show a dove as a supporter, and on one of them are the initials E. S. The Lady Rothiemay who figures so prominently in the feud with the Crichtons of Frendraught, as noted above, was Katherine, a daughter of John, eighth Lord Forbes.

Internally the decorative features of the castle seem in the main to be due to Major Tayler's restoration, though two rooms on the first floor at the west end of the south range show good vernacular panelling of the late seventeenth century. By Major Tayler the drawing-room ceiling was heightened, with the peculiar result that the windows of the storey above open *below* the floor level. Many fine paintings of the Duff period still remain.³

In October 1932, while a drain was being laid, a small subterranean

¹ *Reg. Magni Sigilli*, 1424-1513, No. 1534.

² *Ibid.*, No. 2094.

³ See list of the paintings in Cramond, *op. cit.*, pp. 28-30.

vault was discovered close outside the south-east corner of the castle. The vault, which is out of alignment with the existing buildings, measures 6 feet 7 inches square and was entered from above by a trap, 2 feet 5½ inches by 1 foot 6½ inches, carefully checked for a hatch. On the east side of the vault is a long narrow aumbry, 3 feet 2 inches deep and 14 inches square. This vault may have been a "pit" or prison cell in the base of a former round angle tower (as suggested on plan, fig. 4), which must have been removed before the present south wing was built. If this was so, then the original east wing will have been a long building with an angle tower, very similar to the "palace" at Huntly Castle.

It is known that old cobbling exists immediately in front of the north bow window of the library, so that this ground was doubtless within the ancient barmkin.

THE PRECINCTS.

West of the castle is the farm of Mains of Rothiemay, representing the demesne or "board-land" of the manorial residence. The "Mains thereof" is listed along with "the place, fortalice, and yards" of Rothiemay in a deed of 1601.¹ Part of the buildings seem to be of considerable antiquity, and they include a large kiln with a stone-domed roof. Perhaps this is the identical "kiln-barn" on record in 1634 (see *supra*, p. 232). To the south-west is the dovecot, a building measuring 27 feet 4 inches square over walls 3 feet thick (fig. 7). It is divided into two compartments, of which the east one has been altered to serve as a shelter for beasts, while the west one still retains its numerous stone nests. On the external walls are flat-arched recesses, one midway in the south face, two in the east side, and three in each of the west and north faces. Some of these at least seem to be built-up windows. The two door lintels on the south face are in freestone, and chamfered. There is a garret floor under a plain hipped roof, but both are secondary, and the dovecot, which must have been of unusual size, has evidently been cut down and rearranged. The castle and its demesne have been enclosed, east and west, by spacious precinct walls, taking in a stretch of some 800 yards along the Deveron, and extending back northward on the west side to a distance of over 1300 yards. These walls, and those which enclose the very beautiful garden, are of a most remarkable character, composed of enormous boulders, often as much as 3 feet by 2 feet on the face. The gardens at Rothiemay are probably of very ancient date, for in October 1496 the third Lord Saltoun sent to King James IV.

¹ Crumond, *op. cit.*, p. 13.

a gift of pears,¹ presumably from Rothiemay. At the end of the north avenue, and in the west avenue at the entry from the Mains, are rusticated pillar gates of the Duff period. Prior to Lord Fife's time, when it was diverted to the north, the ancient main road (see map, fig. 1), after crossing the Deveron by the Milltown ford, held alongside the river, where its course is still marked by an avenue of fine old trees, by gaps in the precinct walls, and by the picturesque little balustraded bridge (now known as "Queen Mary's Bridge") that carried it over the Kirktown Burn. From this point the approach to the castle



Fig. 7. Rothiemay Castle: Dovecot.

led up the east bank of the burn, and then crossed it again by another but plainer bridge at the north-east corner of the precinct.

The village of Milltown of Rothiemay, at the eastern entrance to the precincts, preserves the close association between the capital messuage of a medieval manorial centre and the barony mill to which the tenants were thirled. The "castle of Rothiemay and mills thereof" are mentioned in a charter of King James IV, dated 9th March 1492.² The mill is evidently very old, and on its door, whose massy iron key is a notable specimen of old Scottish smithwork, a mark still indicates the highest point reached by the Deveron during the "Muckle Spate" of 1829.

In the Kirk Session records under the year 1607 mention is found

¹ *Accounts of the Lord High Treasurer*, vol. i. (1473-98), p. 302.

² *Reg. Magni Sigilli*, 1424-1513, No. 2094.

of the "Castletoun of Rothimay";¹ and our picture of the appurtenances of a medieval barony is completed by the Gallowhill, which overlooks the castle from the east.

THE "QUEIR OF ROTHIMAY."

Rothimay was a mensal church of the Bishop of Moray, and various entries relative to it will be found in the chartulary of that diocese.² On 28th May 1540 Alexander, Lord Saltoun, received a tack of the parsonage of Rothimay for nineteen years—"the said Lord to uphald, beitt and mend during the forsaidis yeirs the queir of Rotheimay in theking the utheris necessaris reparatioun concerning the personage thereof upovn his awin costis."³ From this it appears that the church consisted of a chancel to which no nave had been added, as often in Scotland during the later Middle Ages; and also that in the sixteenth century at all events the roof was thatched. In September 1626 it was slated, as appears from an entry in the Kirk Session's records in the following terms:—⁴

"Itim it is ordeint that thrie horsis of ilk pleuch pas to the selait heuch of Mayne to bring heam selaites to the Kirk."

On Sunday, 3rd August 1651, "at the very tyme of ringing the third bells," the congregation in the church was "quyttt brocken upp" by the arrival of a troop of English dragoons, under the command of Captain Robiesone, who quartered themselves upon the parish, and as befitted Cromwell's sectaries, did not delay long in venting their ill-feeling upon the church. "The Sackloth wes tackne awaye," laments the Session Clerk, "and not long after this the stoole of repentence upon the very Lords day after sermone tumoultously throwne downe by the English souldiours."⁵

About 1726 the church is described as standing "amid a wood of birch and alder on Dovert." ⁶ It was pulled down by the first Earl of Fife in 1752 because it interfered with the privacy of the house.⁷ A new church was built at the Milltown, the stones of the demolished building no doubt being used for the new one. Many of these stones seem to have reappeared in the present church, which dates from 1807. Nothing save the site of the old building until recently was apparent.

¹ Gordon, *History of Scots Affairs*, vol. i., App. to Preface, p. lii.

² *Registrum Episcopatus Moraviensis*, p. xix. and reff. in Index.

³ Gordon, *Scots Affairs*, App. to Preface, p. liv.

⁴ *Antiquities of the Shires of Aberdeen and Banff*, vol. ii, p. 225.

⁵ Cramond, *op. cit.*, pp. 23-4.

⁶ *Op. cit.*, p. 419.

⁷ *Op. cit.*, p. Ivii.

enclosed with a paling, and containing a single tombstone. Colonel Forbes has now cleared the site, exposing the foundations of the whole building, as shown on plan (fig. 8), with the font and a pediment inscribed 1672. The north jamb of the transept door is in Byth stone and shows a 3-inch chamfer. The font is in granite, octagonal externally, 1 foot 5 inches in internal diameter and 1 foot 8 inches in height. There is a centre drain, and on the edge of one side are two

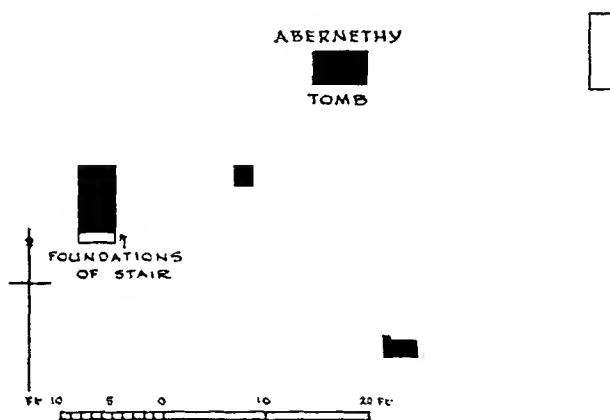


Fig. 8. Old Church of Rothiemay: plan of foundations.

sockets for the hinge of a lid. A quantity of human remains were found, and one shard of medieval pottery. The inscription on the tombstone, now mostly illegible, is thus given by Cramond:

"Among his ancestors underneath this stone is interred John Abernethy of Mayen, a young man of an amiable character. He died 2nd May 1779, in the 21st year of his age; also Helen Abernethy, his sister, who died — April 1787, aged 34; also their nephew, Charles Graham, who died December 1800, aged 28 years."

THE MANSE AND ST PETER'S WELL.

The old manse, a plain oblong two-storeyed edifice, still stands in the Den to the east of the castle, and is now used as the laundry. Beside it is St Peter's Well, with a stone lintel bearing the date 1580; this, however, does not seem to be *in situ*, and probably came from the castle.

THE KIRKTOWN.

The Kirktown of Rothimay is on record in 1617, in which year it was erected by royal charter into a free burgh of barony, with power of choosing bailies and councillors, maintaining a courthouse and market cross, and holding a weekly market on Thursdays. There were also to be three annual fairs: Dustan (St Drostan's) Fair on the 14th December, Sanct Denneis Fair on the 9th October, and Halycroce Fair on the 3rd May. The Castle of Rothimay was declared to be the principal messuage of the barony.¹ Traces of a cobbled causeway exist between the old manse and the church, and this probably was the principal street of the Kirktown.

An "oastler hous in the town of Rothimay" is mentioned in 1628,² but whether at the Kirktown or Milltown does not appear. Probably it was at the Kirktown, for during the campaign of 1715 we hear of a "blind ale house very near Rothimay's House," in which Lord Lovat, Duncan Forbes of Culloden, and Major Fraser took up their headquarters on their journey to Inverness, of which Major Fraser has left us so entertaining an account. Lady Rothimay, whose husband (Archibald Ogilvie) was with Mar at Perth, invited them to the house, and on their declining her offer of hospitality sent them down "two dozen of strong ale," which with the brandy that they got in the inn no doubt insured them a comfortable night.³

Miss Henrietta Tayler has kindly drawn my attention to an amusing passage in a letter amongst the Harley Papers, from which it appears that Dr Johnson's famous Dictionary joke about oats—"a grain which in England is generally given to horses, but in Scotland supports the people"—was not original, but had been made a century before, and *à propos* of Rothimay. The letter is written at London, on 13th September 1672, by Denis de Repas to Sir Edward Harley:⁴

"I was forced for two months' time, in the north, in a place called Rothimay, to live altogether upon pap for want of bread. The Scotch men and the Scotch horses live altogether upon the same diet. I mean upon oats, for there is not a horse in thirty to whom hay is afforded; their bread is made with oats and so is their bonny ale."

I have much pleasure in acknowledging the facilities and assistance which I have received, in preparing this paper, from Colonel and Mrs Forbes of Rothimay; and from Miss Katherine Forbes, who helped

¹ *Reg. Magni Sigilli*, 1607-20, No. 1598.

² *Reg. Privy Council*, 2nd series, vol. ii. p. 334.

³ *Major Fraser's MS.*, ed. Col. A. Ferguson, vol. ii. pp. 62-4.

⁴ *Hist. MSS. Commission, Portland MSS.*, vol. iii. (Harley Papers) p. 327.

me to make the surveys. The illustration of fig. 2 is taken from Bishop G. F. Browne's *Antiquities of Dunecht*, with permission of the syndics of the Cambridge University Press. Fig. 5 is reproduced by courtesy of Aberdeen Journals, Ltd. Mr Alistair and Miss Henrietta Tayler have done me the favour to read my typescript through, and I have derived much benefit from their intimate personal knowledge of the castle.

MONDAY, 11th February 1935.

SIR GEORGE MACDONALD, K.C.B., LL.D., F.B.A., President,
in the Chair.

A ballot having been taken, the following were elected Fellows:—

WILLIAM FENTON, 5 Meethill, Alyth, Perthshire.

BERNARD FERGUSON, Lieutenant, The Black Watch, Kilkerran, Maybole,
Ayrshire.

Rev. WILLIAM MACGILLIVRAY, West Mause, Cairnie, Huntly, Aberdeenshire.

Miss ANNIE STEEL, LL.A., The Croft, Annan.

Rev. JAMES TOLLAND, The Mause, Belmont Church Road, Belfast.

The following Donations to the Museum were intimated and thanks voted to the Donors:—

(1) By SIMON BREMNER, Corresponding Member.

Hammer-stone of Quartzite, measuring $1\frac{7}{8}$ inch by $1\frac{5}{8}$ inch by 1 inch; Leaf-shaped Arrow-head of red Flint, imperfect, measuring $\frac{7}{8}$ inch by $\frac{5}{8}$ inch by $\frac{1}{4}$ inch; Side Scraper, measuring $1\frac{5}{16}$ inch long; and six slightly worked Flakes and Cores of Flint; small rim fragment of a Vessel of very thin dark Pottery, the rim flattened; another with the rim slightly everted and rounded on the top; and three fragments of soft Pottery, buff on the outside and black at the core. All found at what may have been a flint-workers' site on Freswick Links, Caithness.

Small Stone Axe used as a hammer-stone, measuring $2\frac{15}{16}$ inches by $1\frac{5}{8}$ inch by $\frac{3}{4}$ inch; Lead Whorl, measuring $\frac{3}{4}$ inch in diameter; fragment of a thin Bronze Plate; Bone Needle, point wanting, measuring $2\frac{3}{4}$ inches

long; finely made Bone Pin, measuring $4\frac{1}{16}$ inches long. From Freswick Links.

Two small fragments of Pottery, buff on the outside and black at the core; three small fragments of prehistoric Pottery, one of thin dark ware, with an everted rim; small rim fragment of a thirteenth-century Pitcher of light-coloured Pottery. From Freswick Links and Midtown, Freswick.

Whorl of Steatite, measuring $1\frac{1}{8}$ inch in diameter and $\frac{1}{2}$ inch in thickness, found with fragments of a large Steatite Urn at the base of a ruined cairn on Freswick Links.

(2) By Rev. JOHN STIRTON, M.V.O., B.D., D.D., F.S.A.Scot.

Talismanic flat ring Brooch of Silver, the pin shouldered under the loop of the hinge, where the ring is broken, measuring $\frac{1}{16}$ inch in diameter, and inscribed ✠ IHESVS NAZA , found above Mieras, Crathie, Aberdeenshire.

(3) By E. RICHMOND PATON OF HARESLAWMUIR, F.S.A.Scot.

Gilt Casts of the obverse and reverse of the Gold Noble of David II. in the Thomas Coats of Ferguslie Collection of Scottish Coins in the National Museum.

(4) By JOHN R. FORTUNE, Corresponding Member.

Collection of objects consisting of a barbed and stemmed Arrow-head, measuring $1\frac{1}{8}$ inch by $\frac{1}{16}$ inch; a stoutly made Fabricator, measuring $2\frac{1}{8}$ inches long; six Flakes, measuring from 3 inches to $1\frac{1}{4}$ inch in length, slightly dressed on one edge; six Scrapers, five Side Scrapers or Knives; two triangular or tranchet-like Implements; a notched Implement (*encoche*), measuring $1\frac{9}{16}$ inch long; a Knife with a deep *encoche* opposite the worked edge, measuring 2 inches by 1 inch; a small Flake dressed to a point; and two worked objects, all of Flint; two Scrapers, and a Point of green Chert; a Flake of Pitchstone, slightly worked; and a fragment of a Jet Armlet. Found on Airhouse, Lauderdale, Berwickshire.

(5) By the ARDOVIE ESTATE, through Lieut.-Colonel B. H. ADLER.

Stout Iron Spud, measuring 15 inches long, with a pointed blade, a tapering socket, and a foot-rest, found 3 feet under the surface, in the Den west of the avenue at Ardovie, Brechin, Angus.

(6) By HIS GRACE THE DUKE OF PORTLAND, K.G., F.S.A.Scot.

Sickle-shaped Knife of black Flint, finely dressed along the convex

side, and only slightly worked on the other, measuring $2\frac{7}{8}$ inches long, discovered in a press in Langwell House, Caithness, presumably found in the neighbourhood.

(7) By A. D. LACAILLE, F.S.A.Scot.

Twenty-six Aurignacian Flint Implements including cores, scrapers, side scrapers, gravers, and truncated blades, found by the donor at Cro-magnon, Les Eyzies-de-Tayac (Dordogne); Laugerie-Haute, Tayac (Dordogne); Miremont (Dordogne); Abri Sellier, Le Moustier, Peyzac (Dordogne); Laussel, Marquay (Dordogne); Beauregard, Nemours (Seine-et-Marne); and Le Redan, Beauregard, Nemours (Seine-et-Marne).

(8) By JAMES S. RICHARDSON, F.S.A.Scot.

Two Oyster Shells, measuring $3\frac{15}{16}$ inches and $2\frac{7}{8}$ inches in diameter, each with a rectangular part of the nacre cut out for making jewellery, from North Berwick.

(9) By Rev. A. A. MILNE, F.S.A.Scot.

Carved Egg-spoon of Bone, the end of the stem in the form of a closed fist, and a Mustard-spoon of Bone, both from Doune, Perthshire.

(10) By Miss JULIA M. BARNES, Donington, Carr Bank, Milnthorpe, Westmorland.

Medal of James II. and VII., of Lead, for Naval and Military Services, 1685. *Obv.* Head of the King with long hair, and IACOBVS · II · DEI · GRA · ANG · SCOT · FRAN · ET · HIB · REX round the edge. *Rev.* Trophy of arms with a naval battle in background and the legend GENVS ANTIQVVM.

(11) By HARRY B. BRYDEN, 41 Heriot Row, Edinburgh.

Key for a Bank Safe, fitted with a spring plug for the pipe when not in use. On the outer edge of the plate is a hinged lever which falls outwards after the key is partly turned in the lock. The key can be put out of action by unscrewing a short pin in the bottom of the pipe. A Key for extracting the pin in the pipe. Made by Messrs John Bryden & Sons, Bellhangers, 80 Rose Street, Edinburgh, about 1839.

Silver Medal awarded to the above firm by the Society of Arts in Scotland, in 1839, for "their Bank-Safe Lock and Key"; and a Trade Circular issued by them at the same time.

(12) By DAVID WILSON, 66 St. John Street, Penicuik.

Base of Urn of the Beaker or Food-vessel variety, of dark brown

ware, measuring $2\frac{7}{8}$ inches across the base, decorated by two transverse rows of triangular impressions with hanging filled triangles below and extending to the base. Found in a short cist in a sand-pit at Kirkhill, Penicuik.

(13) By J. BOLAM JOHNSON. F.S.A.Scot.

Die of the Seal of the North British Fresh Fish Supply Company, Limited.

(14) By J. A. MASTERTON. 42 Drummond Place, Edinburgh.

Clay Candle-holder found in cutting a drain in the Guildry Close, Perth, in 1900.

(15) By Colonel A. D. GREENHILL GARDYNE.

Collection of relics found at the Vitrified Fort at Finavon, Angus, consisting of fragments of Pottery, Flint and Bone Implements, and a Jet Ring. (See previous Communication by Professor V. Gordon Childe, F.S.A.Scot.)

The following Donations to the Library were intimated and thanks voted to the Donors:—

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Report for the Year 1933-34. Bombay, 1934.

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Henry Ballantyne & Sons, Limited, Walkerburn. December 1929.
London.

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Le Bréviaire-Missel du Prieuré Clunisien de Lewes. Paris, 1935.

(12) By W. DOUGLAS SIMPSON, D.Litt., F.S.A.Scot.
The Deeside Field, Sixth Number, 1933.

(13) By JAMES STEUART, W.S., F.S.A.Scot., the Author.
Records of the Western Marches. Vol. ii.—The Bell Family in Dumfriesshire. Dumfries, 1932.

(14) By GERALD TALBOT CLINDENING, the Author.
The House of Glendonwyn. A Record of its Progenitors, Members, and Descendants for a Thousand Years. Adelaide, n.d.
The following Communications were read:

I.

THE SMALL FLINT KNIVES OF ORKNEY.

BY A. D. LACAILLE. F.S.A. SCOT.

Survivals of types of stone implements from an anterior age are not rare, and while much has been written concerning their evolution less account seems to have been taken of the devolution or degradation of any particular kind, save to mention that such or such a type disappears or passes out of use. Disappearance or disuse of certain implements, once common, would not necessarily take place simultaneously nor even ubiquitously. In many instances proof is forthcoming to show how some traditional types long survived even in localities where least expected. Examples, which appear to represent this, are the object of these notes.

If the antiquity of the artifacts from the littoral terrace and the cave and mound deposits of the western seaboard be accepted, then the hiatus between the time of their manufacture and the early Scottish Neolithic can only be regarded as partially bridged despite discoveries made during the past twenty years. Much has been done to fill this gap by finds and records of implements, whose facies and workmanship are definitely pre-Neolithic. The artifacts from the Dee and Tweed valleys appear to represent an earlier pre-Neolithic horizon than the specimens collected at Shewalton, Ayrshire. Considered as a whole, I believe that all these Scottish specimens, earlier in the North-east and South-east than in Ayrshire, help to clear away some of the obscurity veiling the interval. Marked notice should be taken of the distribution of these microlithic industries, particularly of their spread northward, as represented in the important Deeside discoveries made before and since 1913.¹

Having been interested for many years in Scottish microliths and other stone artifacts presenting, as many do, archaic forms, it was with particular attention that I examined certain small implements with battered backs from Orkney preserved in the National Museum. A visit

¹ Hilda M. L. Paterson in *Man*, vol. xiii, No. 58, pp. 103-5.

to Orkney during the latter half of 1932 afforded an opportunity to inspect private collections and survey ground where such specimens had been found.

Several archaeologists have in recent years pointed out features to show that the stone industries of the Orkney Islands differ in some respects from those of the Scottish mainland. Prehistoric man inhabiting islands of the Orcadian archipelago was better provided than, say, his Shetland contemporary in the matter of raw material for small tools by reason of the local occurrence of flint. Although Orkney flint is not generally of very good quality, in ready access to supplies man was even more fortunate than many of his neighbours south of the Pentland Firth. Inferior as may be the native flint of the Orkney Islands, the fact stands out that small implements fashioned from it give a distinctive appearance to the local industries. The question of poor workmanship may perhaps arise, but to the raw material must be attributed the blame for apparent rude execution, for it can be shown that, when a piece of flint of better quality presented itself, the Orcadian artisan proved that he was not a less skilful exponent of his craft than his mainland neighbours.

Some critics may adduce that the quality of the stone available in Orkney dictated the shape of the artifacts, and that certain pieces, intended for quite ordinary purposes, were made to forms not found generally where more tractable material could be obtained. Admitting the validity of this hypothesis in certain cases, it can nevertheless be refuted as a general principle, for, if the products in stone of the prehistoric cultures be studied even in respect of localities, it will be observed that artifacts conform morphologically through the ages to certain standards. Naturally enough there are some divergences: one region may, simultaneously with another, or alone, have retained longer a particular kind of implement: or, in another district, types formerly favoured or surviving elsewhere may have been discarded. The characteristics of shape prevail with little regard for the material employed in the manufacture of artifacts, and the main features of the culture are always evident. Study shows that the nature of the stone available was not always the factor determining whether it was possible to make implements conforming to standard shapes of the time. If possible, further working or trimming would be applied to the shaped artifact such as would ultimately result in producing as the completed piece a more or less well-finished article. This characteristic, well borne out throughout the Stone Age, is all the more apparent in those implements, which, after primary flaking, were submitted to further treatment of

surface and or edges by means of fabricators of different substances, such as stone, bone or hard wood.

Sometimes it is the good fortune of the collector of stone implements, whatever be the place searched by him, to pick up a specimen of unusual shape, or one whose purpose may long remain undetermined. When, however, a certain form occurs constantly in one region and is apparently not known elsewhere, inquiry seems to be called for. Now, the artifacts, to which particular reference is made in this communication, were collected on the surface with stone implements usually attributed to the industries of the Neolithic and Bronze Ages. Their forms recall earlier products and they are not unlike some artifacts from the 25-30-foot raised beach at Campbeltown figured and described by the Abbé Breuil in our *Proceedings*, vol. lvi., fig. 1, pp. 262-3. Research and examination of very many British and Continental collections representative of the crafts of the Neolithic and Bronze Ages have not so far shown me examples satisfactorily comparing in the strict sense of morphology and execution with these Orcadian implements.

It will be observed that the small flint knives resemble the blades *à dos abattu* numerous from the dawn of the Upper Palæolithic, through the whole of which age and the Mesolithic they are met with in numbers. These Orkney artifacts, very few examples of which exceed $1\frac{1}{4}$ inch (Om. 031) in length, are like penknife blades. They are thick rather than wide in proportion to their length. The trimmed backs are steep and the implements consist of flakes triangular in section. Variations occur, some of the specimens being quite thin and bearing evidence of primary flaking.

The Orkney implements illustrated (fig. 1) are selected representative specimens in the National Museum and examples kindly lent by Mr Thomas Omand, Mayfield, Stenness. With the exception of No. 7, from Heddle Hill in Firth parish, the pieces illustrated come from the parish of Stenness. While not common in Orkney, it is believed, nevertheless, that they are not altogether unfamiliar to the student of Orcadian stone industries.

On the occasion of my visit to Orkney time did not permit of any extensive survey of the ground where the small artifacts were picked up, but an examination did confirm what Mr Omand told me, namely, that no stratigraphical data existed. Another collector, Mr Robert Rendall, Kirkwall, with whom I conversed on these matters, has assembled a series of stone implements in the same way by constant and diligent search of ploughed land when conditions were most favourable after

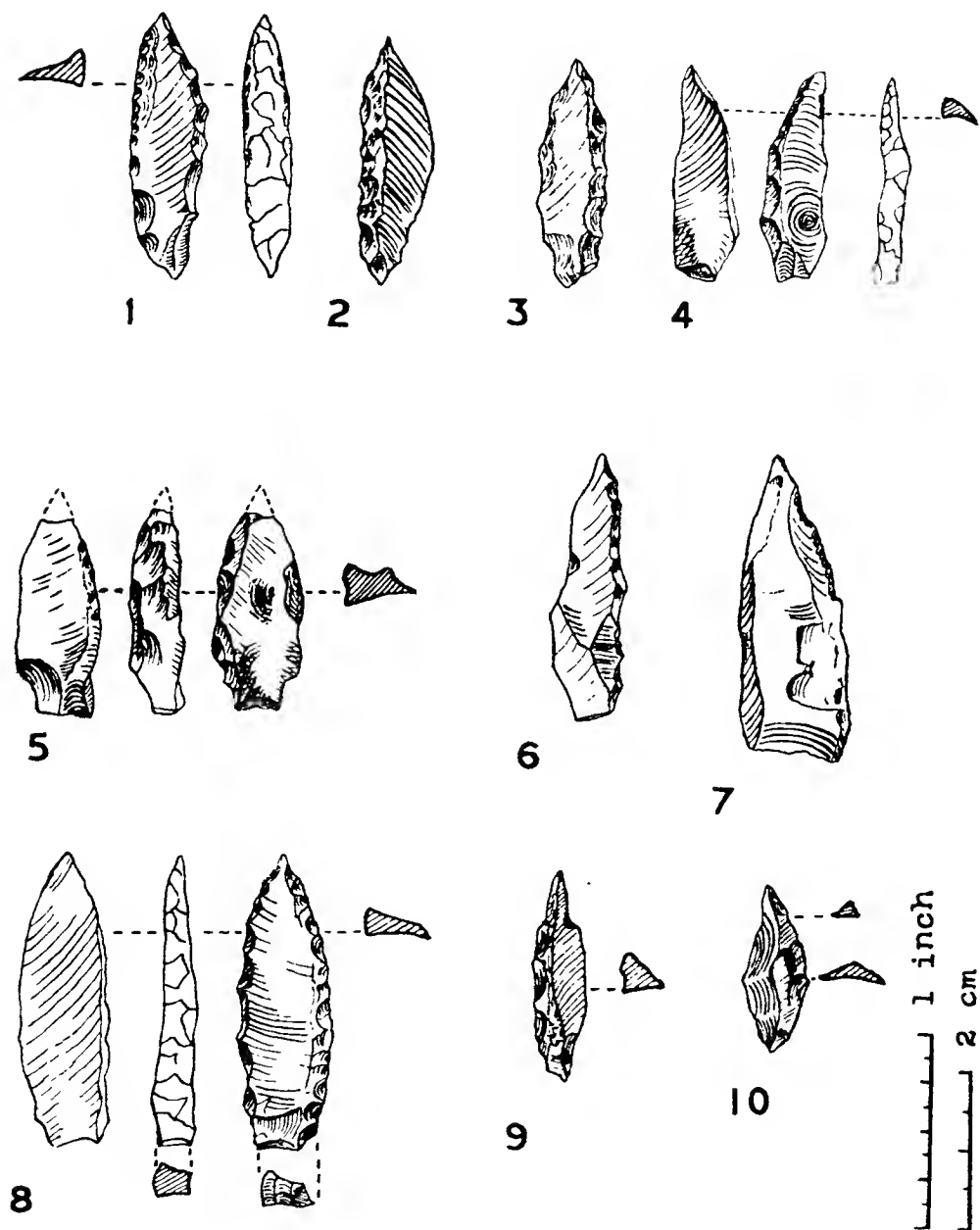


Fig. 1. Orkney Flint Implements with battered back (*a dos abattu*).

rain.¹ In short, to the best of knowledge, the specimens have been turned up by ages of agricultural operations. Thus they consist of surface finds, for no reason can be advanced meantime to show that they differ in period from pieces found in the same conditions and exhibiting analogous characteristics of craftsmanship. There appears to be no question here of artifacts derived from a littoral terrace; the average altitude of the ground and the situation where the pieces were found rule out such a possibility even if there existed a raised beach in the region. Moreover, their fresh condition would set aside ascription to very great antiquity.

Apparently the particular implements, with which these notes are concerned, are a survival of forms met farther south in contexts, which, by their workmanship and conditions of discovery, indicate an earlier horizon than the specimens from Orkney. All that can be said at present, therefore, is that they were manufactured to serve a local need similar, no doubt, to one which had existed elsewhere and which had dictated the employment of special instruments. Despite poor flint used in their make the specimens are well worked, but one example of a better quality of stone belies any opinion which may have been formed to the effect that the prehistoric artisan in Orkney was less capable than his mainland contemporary (No. 8, fig. 1, *infra*). Orcadian flint implements are generally made of greyish material, but many have been fashioned in a brown tending to yellow. When artifacts from these northern islands are examined, it will be noticed that the most delicately worked are those in the more tractable darker shades.

No. 1, of grey flint, has been struck from a nucleus and the bulb of percussion removed, several scars at the butt end showing that tiny flakes were detached. The back is steep and slightly rounded by careful pressure-trimming, probably by a bone fabricator. By removing material at regular intervals along one edge, and by slight pressure irregularly along what in the finished article may be regarded as the upper arris, a rounding was produced in the middle of the back. To this specimen does not apply one of the methods suggested that battering of the back was effected by the delivery of light blows, for the hollows, corresponding to the small bulbs which would result on the pieces detached, testify to dressing by the slight pressure of a fabricator with a lifting and follow-through movement. For the greater part of its edge the implement under notice has been finely dressed on one face to give the tool sharpness and a cutting edge of greater durability than the part left plain which bears no signs of wear. To ensure this property the

¹ Robert Rendall in *Proceedings of the Orkney Antiquarian Society*, vol. ix, p. 21.

edge on the other face near the pointed end has been slightly trimmed. The drawing outlines the disposition of the working on the back. No. 2 is figured for illustration of its steep back, and No. 3 for its similarity to No. 1. Of these three specimens from Stenness, No. 1 belongs to Mr Omand and Nos. 2 and 3 are preserved in the National Museum. No. 4 (lent by Mr Omand), as the side-view shows, has been well dressed on the back, but the quality of the brownish flint has allowed of more delicate trimming close to the sharp point. Near this the edge has been so finely dressed that it is difficult to distinguish the secondary work from signs of use, but marks of wear are visible close to the butt end. This specimen is made from a small flake originally fracturing along an irregular plane of cleavage. Fine flaking near the butt has so trimmed down the artifact that one might assume the implement was made to be hafted. Employment of such a piece of stone, which would probably have been rejected in a locality well supplied naturally with flint, shows how valued was this siliceous material by the Orkney craftsman. The striking platform forms a high angle and the bulb of percussion is most pronounced, the absence of scar, but with many radial fissures emanating from the bulb, pointing to the use of a hammer with the artifact in the making held in the hand. No. 5 (Omand collection) is a rough specimen with a steep battered back. The point is broken, but it is not difficult to reconstruct the full length of the implement. From the presence of a complete cone of percussion on one of the faces it would appear that the stone, from which this artifact is fashioned, was struck unsuccessfully in the first place. Below the cone the edge bears very fine trimming, the necessary preparation for which has been practised on the actual cone slopes by removing flakes so thin as to have been veritable minute scales.

Nos. 6 and 7, in the National Museum, differ somewhat in character from the foregoing, but in execution they are not less interesting. No. 6, retaining the principal feature of the steep back present in Nos. 1, 2, 3, 4, and 5, is, however, much thinner than those described in the preceding paragraph. The greater flaking is bolder, three flake-scars showing on the principal face. No. 7 is of a type more familiar as forms approaching it are well known in the Neolithic and Bronze Ages. This flake tool was treated in a special way, however, as the trimming is confined to a relatively small portion of one edge which is slightly notched near the point up to which the dressing is carried.

No. 8, from Mr Omand's collection, is made from a flake of light brownish-grey banded flint of a quality scarcely inferior to material from localities rich in this stone. The workmanship of this piece is apparently

of late technique, but, strangely enough, associated with features suggesting ancient industries. In appearance the steep back recalls pre-Neolithic artifacts. This association is attractive and the specimen is particularly interesting in this study. The bulbar portion is missing, having been removed from the small flake by a stroke across the piece. On either side of the resulting negative are the scars of trimming, thus providing the tool with a faceted butt. The cutting edge is delicately fashioned for the whole length of one side by careful trimming, which has left the finest of scale scars running from the edge inward for nearly an eighth of an inch. The pointed end is even more finely finished and the back similarly retouched for a short way, but beyond the working merges into coarser pressure-flaking scars. The cutting edge testifies to greater wear near the point than farther down towards the butt. Thanks to Professor G. Schwantes, the Director of the Schleswig-Holsteinisches Museum, Kiel. I was able in November 1933 to examine and compare a Mesolithic flint knife, $2\frac{3}{4}$ inches (Om. 07) long, with this Orkney tool.¹ The two specimens very closely resemble each other, but the example from Gundendorf, Holstein, is much thinner in proportion to its length.

Inquiry as to the different purposes served by some prehistoric implements has not been pursued to any length, and, although comparative ethnography furnishes many solutions, some abstruse problems respecting prehistoric tools have been elucidated in unexpected manner. In this connection, and bearing on stone artifacts of a type technically resembling those from Orkney, there have been finds in the British Isles and on the continent of Europe of bone harpoon heads with thin and delicately trimmed geometrically shaped stone implements firmly fixed in grooves along their ventral and dorsal ridges. Similar mountings in weapons and tools of modern primitive peoples confirm that many such specimens of stone implements were made to serve as barbs and teeth. Discoveries of handles, hafts, and holders of different substances with stone implements still fixed in them have satisfactorily explained pieces whose purpose formerly was unknown.

A suggestion has been advanced that the steep-backed Orkney flint artifacts are arrow-heads, but it is believed that the illustrations and reference to comparative examples to be mentioned will dispel this opinion. Two apparently doubtful instances are represented by Nos. 9 and 10 (Omand collection), but it is the writer's view that only No. 9 can be regarded as a true point. No. 10 is the only example in the series

¹ No. 9057 in Schleswig-Holsteinisches Museum. Professor Schwantes tells me that in Schleswig-Holstein such implements do not occur in contexts later than Mesolithic. Letter to the author, dated Kiel, August 8, 1934.

figured here, which may have served to arm an arrow, and the dressing of the portion near the point is similar to the working on some of the specimens already described. Regarding such implements with battered backs, one fact seems to have been overlooked (although not relevant

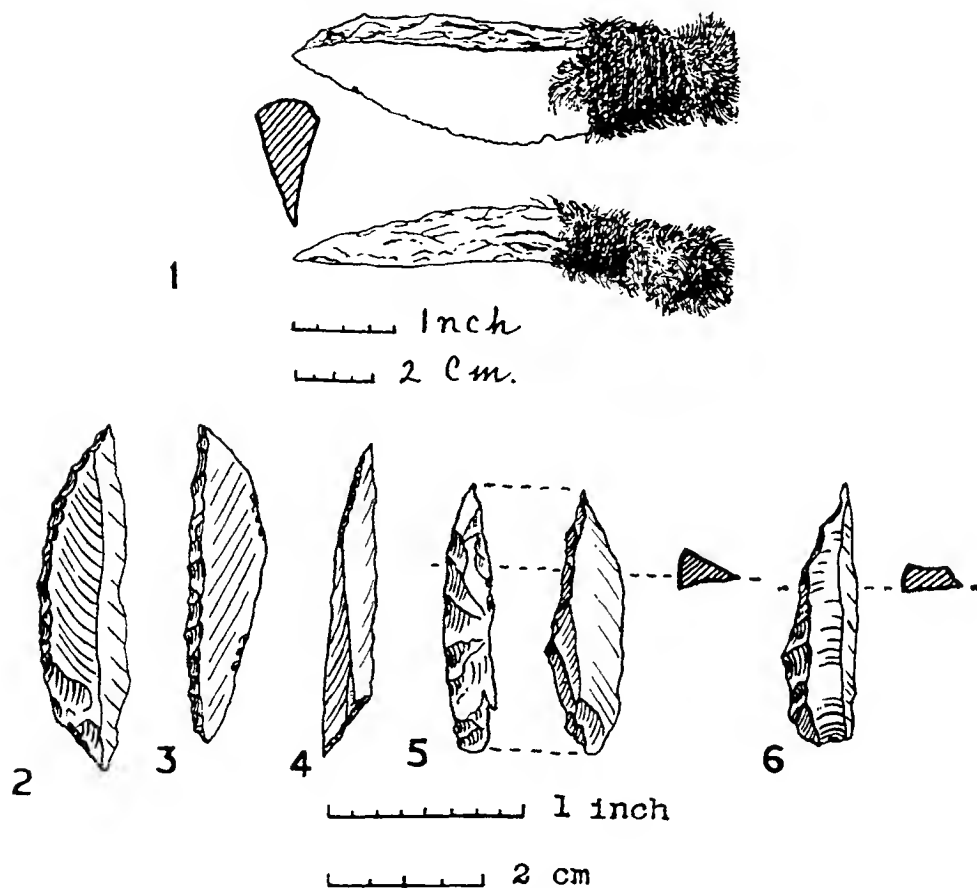


Fig. 2. 1. Australian steep-backed knife of hornstone handled with kangaroo-skin (after Evans). 2 and 3. Sordes, Mont-de-Marsan (Landes); Azilian *canifs* (after Breuil and Dubalen). 4. Sordes, Mont-de-Marsan (Landes); Azilian flake implement (after Breuil and Dubalen). 5 and 6. Australian surgical knives of jasper.

in the case of No. 10): the section would hardly allow of that true flight possible to arrow-heads of the different well-known types. Some of these occur in Orkney, but the variety is not large, arrow-heads there being chiefly the leaf-shaped sort.

A characteristic common to Nos. 1, 2, 3, 4, 5, 6, and 8 is the slight attenuation of the implements near the butt where each has been dressed

by removal of small flakes. This feature suggests not only the use of the implements as knives, but how they were hafted, doubtless by being firmly inserted in a hollow holder such as a bone or prepared piece of wood. Handled so, the tool, although small, could yet be easily manipulated while the broad rough back would permit the operator to exert finger pressure. Another method providing a grip for small implements was that employed by Australian aborigines, which method had the advantage of being adaptable also to large tools. This very simple and perfectly effectual form of handle consisted of binding a piece of the skin of an animal round the butt of the tool, leaving the hairy side exposed. In his classic work the late Sir John Evans has figured a small knife, triangular in section, of hornstone, from Australia, the butt so provided with a skin grip.¹ It is thought that illustration of such an example after the original woodcut may be useful to show remarkable similarity of form at the same time as showing style of handle (fig. 2, No. 1).

Reason to assign these implements to a pre-Neolithic culture seemed to be wanting despite recognition of shapes found in certain Mesolithic industries. Knowing that Professor Abbé H. Breuil, Hon. F.S.A.Scot., had found somewhat similar artifacts in the French and Spanish Pyrenean district, an opportunity was taken to show him these Orkney specimens. Monsieur Breuil agreed with me that they resembled not so much Tardenoisian as Azilian types. For comparison he drew my attention to pieces discovered by him and Monsieur P. Dubalen in the Dufaure rock-shelter at Sordes near Mont-de-Marsan (Landes).² Three of the French examples, now in the museum at Mont-de-Marsan, will be considered in respect of shape and technical similarities.

In fig. 2, Nos. 2 and 3, are reproduced illustrations of *canifs* with another implement, No. 4, from what these French archæologists deemed a Mas d'Azil layer from artifacts of stone and stag-antler yielded by their excavations.

The straight cutting edge of No. 2, fig. 2, and its curved dressed back are to be compared with the Orkney instruments, Nos. 1, 4, and 8 of fig. 1. The French example, No. 3, fig. 2, with curved cutting edge and straight trimmed back compares with the tools from Orkney in fig. 1, Nos. 2, 3, and 5, which present precisely similar features. Remark-

¹ *Ancient Stone Implements of Great Britain* (1872 Edition), fig. 198 and p. 264. A large knife of greenstone, from the Murray River, Australia, to which still adheres a piece of kangaroo-skin, is preserved in the National Museum (*Catalogue of National Museum of Antiquities of Scotland*, No. BU-5, p. 107).

² H. Breuil and P. Dubalen, "Fouilles d'un abri à Sordes en 1900," in *Revue de l'Ecole d'Anthropologie de Paris*, 1901, pp. 251-68.

ably close is the parallel in the case of No. 2, which is pointed at each end.

No. 4, fig. 2, another type, with peculiarities, calls for comparison with Nos. 6 and 7, fig. 1, on account of long flaking. Mention has been made of the trimmed butt end of No. 8, fig. 1, a feature to be noted in considering further the characteristics of the Azilian artifact, No. 4, fig. 2. This implement, although dressed delicately on the facet of the oblique fracture, was first prepared in the same manner by truncation of one end of the flake. Such has been the case, too, with No. 7, fig. 1.

Over forty years ago Monsieur de Pierpont, referring to small pointed stone knives *à dos abattu* from Belgian Tardenoisian sites found in association with colouring materials, suggested they had served as tattooing instruments.¹ The late Mr John Smith held like views in regard to some of the diminutive points he had collected on the Shewalton Sands, Ayrshire.² While recognising that such a matter as the question of tattooing in prehistoric times must remain without answer until further evidence forthcomes, it is interesting to note that lumps of red pigment in the form of crushed hæmatite have been found by Mr Robert Rendall not far from Kirkwall where he had picked up numbers of stone implements.³ Records come of the occurrence of ground hæmatite with abundant diminutive pointed implements from farther afield, this colouring material having been got in the caves and rock-shelters of the Vindhya Hills, in Baghelkand and Bundelkand.⁴

Again, simple surgical cuts, which could be made by means of small implements, are not beyond the possibilities they offer, as I suggested when discussing Tardenoisian points and small knives found near the mouth of the River Irvine.⁵ These implements were compared then with some Australian stone instruments of quite modern production used by the aborigines in initiation ceremonies, which included scarification of the skin of adolescents and also the performing of certain extraordinary operations demanding a degree of skill little to be expected from the employment of such instruments by the natives in their wild surroundings.⁶ Apart from the foregoing digression and the knowledge to which they have been put, typical examples of some of these Australian knives are figured to show their close resemblance to the implements

¹ "Congrès International d'Anthropologie et d'Archéologie Préhistorique," *Compte Rendu de la XIVe Session, Genève, 1912*, p. 307.

² *Cit. supra, Prehistoric Man in Ayrshire*, p. 111.

³ *Proceedings of the Orkney Antiquarian Society*, vol. ix, p. 22.

⁴ *Journal of the Victoria Institute*, March 18, 1889, p. 296.

⁵ A. D. Lacaille in *Proc. Soc. Ant. Scot.*, vol. lxiv, p. 39.

⁶ Lord Avebury, *Prehistoric Times* (1912 Edition), p. 427.

with which these notes deal. Nos. 5 and 6, fig. 2, represent surgical knives of a fine quality of jasper-flint.

It is understood that some small artifacts of geometric forms have recently been recognised in Orkney collections, their shape suggesting a similarity to certain pieces occurring in late Tardenoisian contexts. A wide field of research thus appears open to the inquirer, and it is

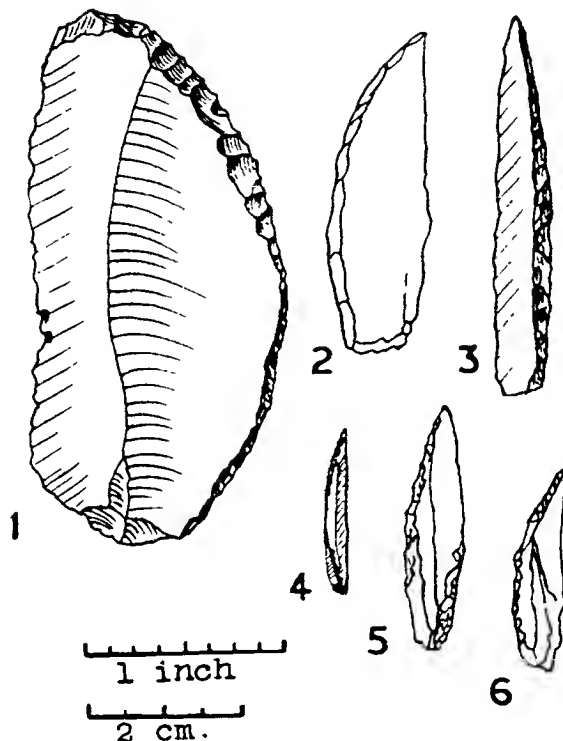


Fig. 3. Paleolithic and Mesolithic Knives or Points. 1. Abri Audi; Aurignacian I. (after Rutot). 2. Châtelperron; Aurignacian II. (after Baillet). 3. La Gravette; Aurignacian V. (after Parat). 4. Les Eyzies; final Magdalenian (drawing by Lucien Dursin). 5. Svardeborg; Maglenesean (after Johansen). 6. Dryburgh Mains; Tardenoisian (after Callander).

one which ought not to be ignored when more facts connected with Orcadian stone industries have accumulated. As yet little is known about the stone implements of the two large island groups of the British northern waters. Certain types present problems, and it is relevant to state that in a number of quartz tools found in Shetland one may observe a likeness to some stone implements of Azilian manufacture.¹ At

¹ Notably some greatly weathered scrapers described by me in *Proc. Soc. Ant. Scot.*, vol. lxxvii, pp. 327-35.

present it is only possible to advance a few suggestions relative to the small implements discussed, as that ample knowledge necessary respecting local conditions can only be acquired by lengthy stay in those localities yielding the artifacts.

Mention having already been made that small stone knives with steep backs occur continuously in Upper Palæolithic cultures, it is thought that the Scottish student may find it useful to compare illustrations of specimens of some types with figures representing the Orcadian implements noted. Mesolithic examples are shown in addition, one being a microlithic knife of Maglemosean make from Denmark, and the other a Tardenoisian implement from Tweedside (fig. 3).

II.

A CINERARY URN AT HORSBRUGH CASTLE FARM, PARISH OF INNERLEITHEN, PEEBLESSHIRE. BY ARTHUR J. H. EDWARDS, F.S.A. SCOT., ASSISTANT KEEPER OF THE NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND.

The urn (fig. 1) was found in December of last year $\frac{1}{4}$ mile north-east of the ruins of the old castle when ploughing was going on in one of the fields of the farm. It had been placed in the ground mouth downwards, and the base, being only a few inches below the surface, was struck by the plough. This attracted the attention of Mr Napier, the ploughman to whom we are indebted for its preservation. Fortunately only the bottom was broken, and as most of the fragments were recovered it was possible to reconstruct the urn in the Museum. The vessel, which is made of a well-fired brownish coloured clay, is a double cordoned cinerary urn of the Bronze Age. It measures 14 inches in height, $12\frac{3}{8}$ inches in external diameter at the mouth, $12\frac{7}{8}$ inches at the widest part of the body, and $4\frac{3}{4}$ inches at the base. The cordons or raised mouldings are $3\frac{1}{4}$ inches apart, the distance between the upper one and the rim measuring $2\frac{3}{4}$ inches. The latter space is the only part which is decorated, and here a series of reversed hatched triangles almost encircle the urn: a space of 5 inches in length is, however, filled with oblique parallel lines only. The rim, which is bevelled sharply downwards towards the interior, is very thin, measuring only $\frac{9}{32}$ of an inch in thickness at the top. The inside of the bevelled part, $\frac{7}{8}$ inch in width,

is ornamented with parallel oblique lines bordered above and below by a single horizontal line. The whole of the decoration has been made by impressing a twisted cord upon the clay when it was soft. The urn contained a quantity of incinerated human bones and three very small fragments of what was probably a bronze knife. When placed together



Fig. 1. Cinerary Urn from Horsburgh Castle Farm.

these pieces of metal measure $1\frac{13}{16}$ inch in total length and $\frac{9}{16}$ inch in greatest breadth. They were contorted by heat, and doubtless had been placed with the body on the funeral pyre when the cremation took place. It may be noted that another bronze blade similarly contorted had been recorded from Scotland. Four cinerary urns also of the cordoned type were found many years ago at Cambusbarron, near Stirling. All contained cremated human bones, but in addition one yielded part of a burnt bronze blade and another a perforated stone hammer.¹

¹ *Proceedings*, vol. v. p. 213.

This recent find adds yet another to the already numerous records of cinerary urns which have been found mouth downwards. It is a well-known fact, especially to those in museums who have to handle this class of pottery frequently, that many of these vessels are so top-heavy and the base so small compared with the wide mouth that they stand very insecurely when placed in an upright position, and are ready to topple over at the slightest touch. If they were cooking-pots for domestic use it could be said that the large mouth with its rapidly narrowing body and small base might be a convenient shape for placing in a hole in the ground while fire was built round it or heated stones dropped into its interior. But these vessels are recognised as funerary urns, and it is seldom that the outside shows any traces of having been in a fire. There is no soot encrustation such as one sees in pots which have obviously been used for culinary purposes. The small flattened base must then have been necessary for the technique of its building, and in all likelihood the smaller the base the greater was the skill of the maker. There is therefore a possibility that the cinerary urn was never meant to stand on its base but mouth downwards. Its particular shape thus showed a representation of something seen in the daily life of the craftsman—male or female—who made it. I suggest with some diffidence that the inverted urn may have been a reproduction in miniature of a hut, and that the remains of the deceased after cremation were placed in a receptacle which had some resemblance to the dwelling which he had occupied when alive.

It is true that the hut was not always exactly circular, sometimes it was more or less oval, but, generally speaking, the appearance of these dwellings, with their low upright walls and steeply sloping roofs, was probably one of similarity to the cinerary urn when placed mouth downwards. We have for comparison the House Urns of the Continent, and, although the shape of these is different, it is an analogy which cannot be overlooked.¹ Also in certain cases the mouth of our cinerary urns was probably covered by a more or less perishable material so as to keep the contents intact, and observers who have an opportunity of examining these vessels *in situ* should look carefully for any traces of fabric which may still remain.

The Society is indebted to Mr James Fox, who brought the find to its notice, and to Sir John Horsbrugh-Porter, who has kindly presented the urn to the Museum.

¹ *Reallexikon der Vorgeschichte*, vol. v, pp. 221–28.

III.

AN ACCOUNT OF THE EXCAVATION OF A DWELLING OF THE
VIKING PERIOD AT "JARLSHOF," SUMBURGH, SHET-
LAND, CARRIED OUT ON BEHALF OF H.M. OFFICE OF WORKS. BY
ALEX. O. CURLE, C.V.O., F.S.A.Scot., F.S.A.

After completing the excavation of the prehistoric Dwelling No. v, previously reported, and on failing to find evidence of any other kindred construction adjacent, attention was directed to certain remains of structure which had been exposed in two places in exploratory trenches in 1933. The nearest, a short stretch of straight wall, lay only some 116 feet to the north of the remains of Dwelling No. v, while the other was some 170 feet distant in a north-westerly direction.

As prehistoric construction was being sought, the more northerly building appeared to offer the best prospects, and accordingly attention was particularly directed to this in the first place.

The upper surface of the wall lay beneath a bed of peat-ash, some 3 to 4 feet deep, sloping towards the north. In fact, peat-ash lay deposited to a considerable depth over the whole of the enclosed area on the north side of the promontory, indicating a very long occupation of the whole site.

On the upper surface of the wall, when exposed, there was found a heavy stone club which appeared to connect the remains, in point of time, with the group of dwellings previously excavated.

As the exposure of the wall proceeded, a bed of fish midden-refuse was encountered overlying for the most part the northern slope of the peat-ash deposit, but, to a small extent, occasionally occurring in layers within it. From this bed came a number of pins and needles of bone, and other relics, and, of particular importance, two fine combs of bone with teeth on one side, and decorated with panels filled with interlaced ribbon ornament, all to be dealt with hereafter in treating of the relics. Suffice it to say here that these combs were of a well-known type of Viking ornament, dating from the ninth century, and so supplying an approximate date for the deposit of the fish refuse.

The wall, formed of such massive stones as to suggest the work of the broch-builders, proceeded for a distance of 14 feet in a south-westerly direction, and, with an offset to the eastward for a distance of 12 feet, thereafter continued in a north-easterly direction to its termination 10 feet

farther on. It formed on plan a U-shaped figure with one arm slightly shorter than the other and trending outwards. This proved to be entirely a foundation resting on the natural soil, and with no signs of a floor-level to either side of it. Its greatest depth below the surface was 5 feet, and its breadth 4 feet 6 inches where both edges remained intact. In respect that fish midden-refuse was actually found on the wall at one point, it seems probable that the superstructure had been removed during the early Norse period as fish middens were found only in that connection. Any further exploration of this foundation towards the south-west in the direction of the group of broch buildings, was precluded by the presence of a walled enclosure containing a modern grave. The proximity of the end wall of the Norse house, subsequently exposed, to the trench in which was revealed the more easterly section of the foundation, made it necessary that the latter should be filled in, and the foundation covered, as soon as it was realised that no further progress was in the meantime possible.

Attention was then directed to the more southerly length of walling exposed in 1933, which trended in a direction from south-east to north-west. As the soil in front of it was removed, a wall parallel, and some 4 feet 6 inches distant, was exposed towards the south-west. Both walls stood to a height of about 2 feet 9 inches. Between them, at the spot where the excavation was being carried on, which was ultimately found to be in front of a doorway in the inner or south-west wall, lay a kitchen-midden containing fish and animal remains (the former greatly preponderating), many fragments of vessels of steatite, pins of bone, a conical whorl of lead, a typical Norse conical playing-piece of bone, and iron bolts with lozenge-shaped heads, such as were used in the construction of Viking ships. Eventually it was ascertained that the refuse had been thrown into a space which formed an alley between two buildings facing one another (fig. 1).

As the structure to the south-west lay entirely within the fenced enclosure it was decided to explore it in the first instance. When cleared of sand, soil, and peat-ash which lay deep within, it was found to be a building lying with its main axis north-west and south-east, and extending for a distance of 103 feet 8 inches (see Plan, facing p. 272). The character of the relics found in the adjacent middens had clearly indicated that a dwelling of the period of the Norse immigration had existed in the immediate neighbourhood, and those found in clearing out the building itself showed that here was a house of that time. It was evident, however, on studying the remains that this building for its full length did not represent the original dwelling. While the greater part of the side walls

and the south ¹ end were probably primary, the end wall towards the north was obviously secondary. The latter was constructed in a different manner, being built with only two stones in breadth and without any intermediate filling of earth, or layer of turf between the stones on the outer face. Its breadth was only 1 foot 8 inches. Eventually the foundation course of the original end wall was exposed at a distance of



Fig. 1. The Alley-way between two Buildings.

some 7 feet back from the inner face of the existing wall. Presuming, then, that the south end was as originally planned, the primary dwelling had measured 95 feet in length over all, and 90 feet along the interior (fig. 2). The wall on the west had been straight in direction, while that towards the east made an outward bulge in the centre of its length, so that while the breadth of the interior at either end had been some 12 feet, at the centre it had extended to 18 feet.

The east wall in the centre portion of its length was fairly well preserved,

¹ Throughout, for the sake of simplification, the approximate cardinal points of the compass are used in the description.



Fig. 2. The Interior from the South End after excavation.



Fig. 3. Inner face of Wall showing Method of Construction.

and measured some 3 feet 9 inches, practically a metre, in height where highest, and was of similar breadth. The top of it lay only a few inches beneath the turf of the meadow. It was constructed without mortar in regular courses on either face of undressed stones, selected probably from the adjacent beach, with a core of compacted earth in the centre. While the inner face showed contiguous courses one above the other, the exterior



Fig. 4. The Interior from the North End.

bore evidence of having been constructed with alternate courses of stone and turf (fig. 3). This method of construction is that revealed in houses of the Viking times examined in Iceland, and there well shown in the ruins at Áslákstunga *hin innri*.¹

Along the foot of this wall on the exterior there was laid a row of flagstones about $1\frac{1}{2}$ foot in breadth, a feature apparently known as the *stett*² and visible in front of the wall on the left in fig. 1.

The wall on the west appeared to have been built, for the most part,

¹ Thorsteinn Erlingsson, *Ruins of the Saga Time*, London, 1899, p. 38, also pl. va. p. 41.

² Erlingsson, *op. cit.*, p. 63.

against a bank. In the northern half it had been broken down in two places, and the existing wall in that section was in large measure a reconstruction (fig. 4). The lower course, however, of the original wall protruded from below the foot of the existing wall, as shown on the plan (see Plan), and formed a junction with the foundation of the primary end wall at a distance, on its inner face, of 11 feet from the inner face of the surviving



Fig. 5. The East Entrance from the Interior.

wall. The original wall had been constructed in the same manner as the side wall on the east with a core of earth, and had measured practically one metre in breadth, being slightly broader in the centre of its length. Paving was also found in front of it.

There were two entrances into the original dwelling, one through the centre of the south wall, and the other through the east wall at a distance of some 15 feet from the inner face of the original end wall, and 26 feet from the existing wall (fig. 5). The latter had apparently been the principal entrance, and opened directly into the interior, passing straight through the wall with a width of 3 feet 9 inches. At the inner end, on

the right on entering, there was a bar-hole in the wall. The position of the doorway corresponded with that of the doorways in the Icelandic houses of the type.¹ The entrance at the south end, measuring 2 feet 6 inches in width, was approached by a passage (fig. 6) terminating indefinitely at its outer end, but still walled on either side for a length of 20 feet 9 inches with a breadth of 4 feet at its outer end, gradually diminish-



Fig. 6. Paved Passage on the Exterior at Southern End.

ing to the doorway. It curved slightly from the south and was paved throughout its length. Within the dwelling the line of the east wall of the passage was carried forward by a line of boulders for a distance of 14 feet, while the paving had probably been continued somewhat farther, but was confised in a mass of tumbled stones.

At this end of the building, on either side of the passage, were large quantities of burnt broken stones which on the right appeared to have been within a compartment (see fig. 7), while on such material the end wall was actually founded.

¹ Erlingsson, *op. cit.*, *passim*.

Before proceeding to describe the features that were exposed in the interior a digression seems justified to explain the type of house to which this belongs, as no other example appears to have been excavated thus far in the British Isles, and particulars in the English language are difficult to obtain.¹

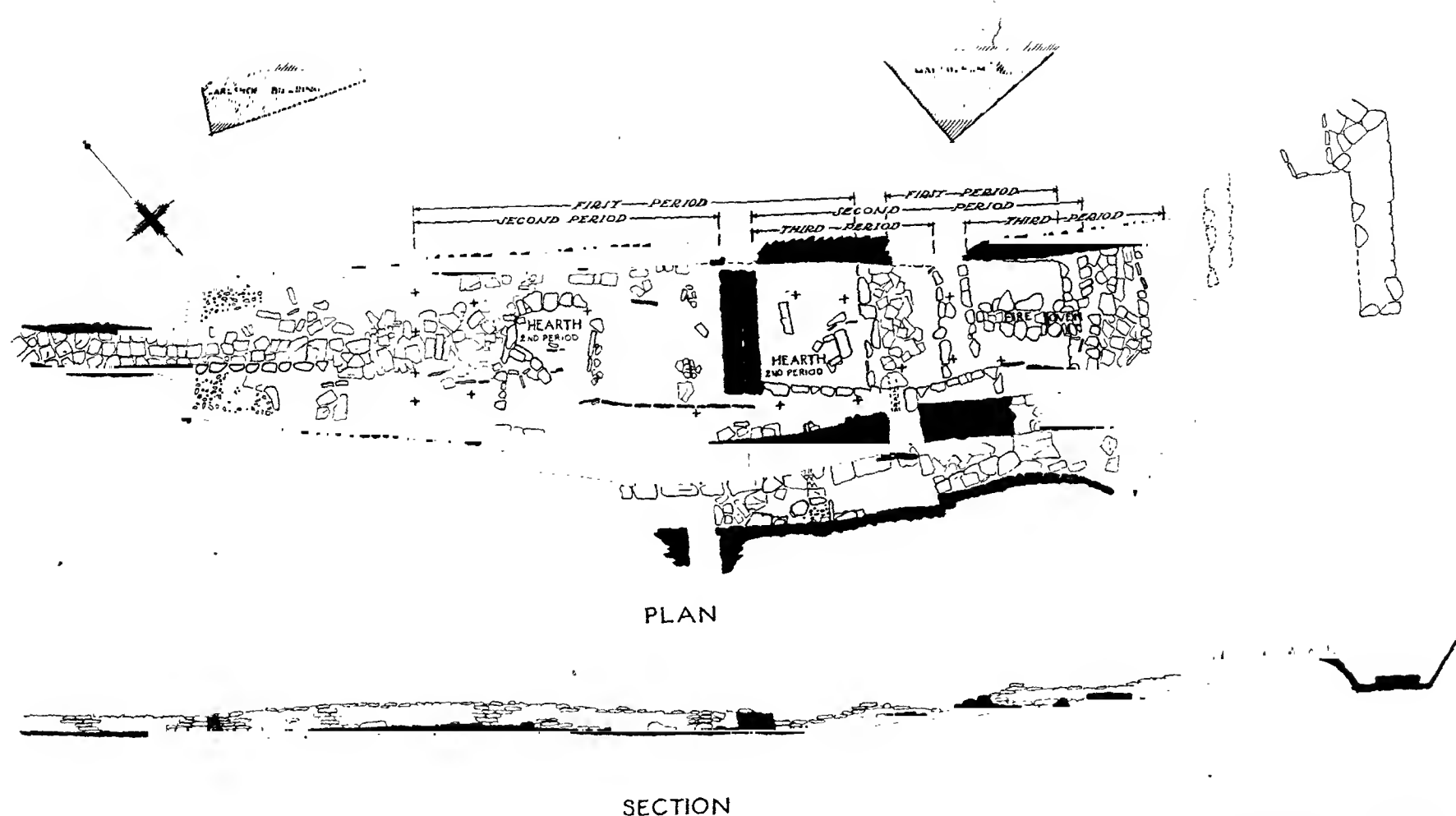
Houses such as that at Jarlshof were the dwellings of the early Norse



Fig. 7. Southern Entrance and Paved Passage in Interior.

immigrants, and were in reality farm-houses, having associated with them other buildings connected with the requirements of the farm. The term "Viking," as applied to their ownership, is apt to induce a wrong conception, the picturesque, but less reputable aspect of the lives of those immigrants, having quite eclipsed, in the mind of the public, their normal mode of existence. The earliest type of house, as illustrated in Iceland, was usually oblong on plan, with the rooms which it contained placed in

¹ The details of a Norse establishment are taken from the Introduction to Erlingsson's work above quoted, by F. T. Norris and Jón Stefánsson, in the *naam* founded on Dr Valtýr Guðmundsson's *Privatboligen på Island i Sagatiden*, København, 1889. See also *The Story of Burnt Njal*, by Dasent, p. xcvi.



JARLSHOF, SHETLAND.
NORSE HOUSE.

ALEX. O. CURLE.

H. M. OFFICE OF WORKS
EDINBURGH. 1934.

[To face p. 272.]

alignment. The walls were from one to one and a half metres thick, the same in height, and constructed as previously explained. The ordinary rooms were three or four in number, and consisted of the dining- or living-room, known as the *stofa*; the sleeping room, the *skáli*; the kitchen, the *eldhús*; and the larder, the *búr*. In addition to the dwelling-house there were often outbuildings, the whole forming a group resembling a Scottish steading. The *stofa* was the principal room of the farm, and was used for sitting in, and for meals. Occasionally, to accommodate an overflow of guests, it was utilised as a sleeping chamber as well, and as the sagas contain accounts of the entertainment of numerous guests this was no doubt of frequent occurrence. It was often richly furnished with tapestry and other woven work of wool or silk, or skins, according to the wealth of the owner, and its wainscot and ceiling carved or panelled. The fireplace was formed with a number of flat stones set on edge, on a rectangular plan. There were several fires placed along the middle of the floor, and on that account called *lang-eldar*—i.e. the long fires.

A raised wooden floor, the *pallr*, ran along the two side walls, and sometimes along one end of the *stofa*, upon which benches were placed. The main floor was usually covered with a layer of ashes from the fires, known as the *gólfskan*. The principal seat, the *öndregi*, was placed on the *pallr* between the two central uprights supporting the roof, and was sufficiently large to seat more than one person. Small tables were placed along the *pallr*, in front of the benches, for meals.

In the earliest period the term *skáli*, surviving in the place-name Skail in Orkney, was used to designate the whole house, which would be of one compartment, but in later times the *skáli* was combined with the *eldhús*, and subsequent to A.D. 1000 the *skáli* meant only the sleeping apartment. Along the side walls of the *skáli* ran a raised earthen or wooden flooring, the *set*,¹ occasionally fenced off in front by carved wooden pillars, the *set stokkar*, and which was divided into sleeping places. At one end of the *skáli* were one or more box-beds, *lok-hvíla*, usually reserved for the master or mistress, or for important guests.

The *eldhús* was the kitchen. In early times it also served as a sleeping apartment, but by about the year A.D. 1000 it had ceased to be used for that purpose. The fireplace, *eldsto*, was in the middle of the floor.

Other rooms to be found sometimes under the same roof, but which do not seem to have been represented in the Jarlshof dwelling, were the *dyngja*, or women's room, found only on large farms; the *badstofa* or bath-room, used either for steam or tub baths, and similarly confined to large

¹ Norland and Stenberger, *Brattahlid*, p. 64, Copenhagen, 1934.

farms: the *búr*, or larder; the *skemma*, or room for winter stores, such as meat, dried fish, etc.; and the *smíðja*, or smithy.

Other buildings, always built of turf and stone, were the *fjós* or cow-house, the *fjárhús* or sheep-house, the *hlada* or barn for the storage of hay, and the *hesthús* or stable.

The ship-shed, or boat-house, was a structure of turf and stone with a wooden roof, which served both as a hithe for the ships in winter, and as a shipyard where boats were built or repaired.

There was also a *kriar*, or sheep-fold, usually a rectangular structure built of earth and stones, without a roof, and only employed for milking the ewes in during summer.

Originally the Jarlshof dwelling was probably a two-roomed house, of which the living room, or *stofa*, occupied the greater part, and the kitchen, or *eldhús*, a minor portion to the right of the doorway at the north end. At the south end were probably one or more outhouses.

While the history of the northern end is fairly clear from the plan, that of the southern extremity is more difficult to determine.

The side wall on the south-west at the latter end, which alone remains, tapers towards its junction with the end wall, which appears too narrow to have supported a gable, being only 15 inches thick. The paving of the passage, as already mentioned, is carried forward into the interior and is bordered on the right by a line of boulders, as may be seen in fig. 7.

There was no indication in the side walls of the southern section of any reconstruction, both walls being of one and the same period as far as could be seen. At 23 feet inwards, however, there were found, in alignment across the interior, a row of what were believed to be four postholes, and at a distance of 6 feet farther in, other two similar holes (see crosses on Plan).

In the immediate neighbourhood of these holes lay many displaced stones, presenting the appearance of an overthrown wall, but it is right to add that no actual foundation-course of such a wall was discovered. It is suggested that along the line of the post-holes there was a wall of stone with a gable superstructure of turf, having a doorway through it, probably in the centre, where, between the adjacent post-holes, there is a space of about 3 feet in width. There was no definite indication of occupancy of the area to the south of the line of post-holes, and no post-holes were found within it.

In ruins of dwellings of an earlier period which have recently been excavated in Norway, there occurs occasionally at one end a paved area, which is believed to have been used for cattle, and some such purpose may have been fulfilled here.¹

¹ Jan Petersen, *Gamle Gardsanlegg i Rogaland*, p. 88, Oslo, 1933.

It may be assumed that the portion of the structure actually occupied as a dwelling extended from the line of post-holes to the outer face of the primary wall at the north end, a distance of some 70 feet (21 metres).

Crossing the interior, almost in a line with the south wall of the side entrance, there is an incomplete row of stones, shown in the centre of fig. 11, at the edge of an irregular bed of flat stones which form the covers of a drain to be described hereafter. This probably indicates the position of a partition wall, destroyed when the drain was constructed, and which separated the *stofa* from the *eldhús*. Further evidence in support of this conjecture may be seen in the section A-A on the Plan by the change of floor-level at this point, that of the northern end being higher than the rest. A similar difference in floor-levels was observed at Áslákstunga¹ and presumed to indicate separate chambers. Such an arrangement as is suggested would have made the living room some 39 feet in length, and the kitchen approximately 16 feet.

Along the east wall of the *stofa*, at a distance of 3 feet 9 inches in front, runs a line of thin slabs set on edge, and protruding about one foot above floor-level, which is evidently the remains of the kerb of the *pallr* (fig. 8). It is preserved for a length of 18 feet. On the opposite side of the building a single slab on edge at a similar distance from the wall, may indicate the former existence of a platform along that wall also.

While the whole floor of the *stofa* was covered with a bed of peat-ash, along the front of the supposed remains of the *pallr* on the east side the ash was of a brick-red colour indicating the position of a long fire. If the fire had originally been outlined with stones these had disappeared, probably when the still extant hearths were made during a second occupation.

As the roofs of such dwellings were supported on a double row of posts placed along the floor, it was obvious that the holes in which these posts were placed must have existed.² Unfortunately the material which formed the floor was in great measure peat-ash, and beneath it discoloured soil, so that little evidence of a post-hole was likely to be forthcoming except from the remains of wedging stones. Only in three instances did such stones remain, and, as in two instances these lay on the line of the primary hearth within the *stofa*, they were evidently secondary. An examination, however, revealed in the centre of each, at a depth of some six to eight inches below the surface, a flat stone laid horizontally.

A chance discovery of such a stone similarly placed at 3 feet 9 inches from the wall, towards the north end, furnished an indication, and

¹ Erlingsson, *op. cit.*, p. 33.

² For suggested reconstructions of roofs see Sigurd Grieg, *Jernaldershus på Lilla*, Oslo, 1934.

following this clue a series of sunk stones were discovered along both sides of the building, which are shown on the Plan by crosses, and are believed to have been the bases of the holes in which the posts rested. On two of these stones, in what had presumably been the post-hole, fragments of carbonised wood were discovered, which on examination was found to be the remains of pine. A bed of wood-ash over one of the sites

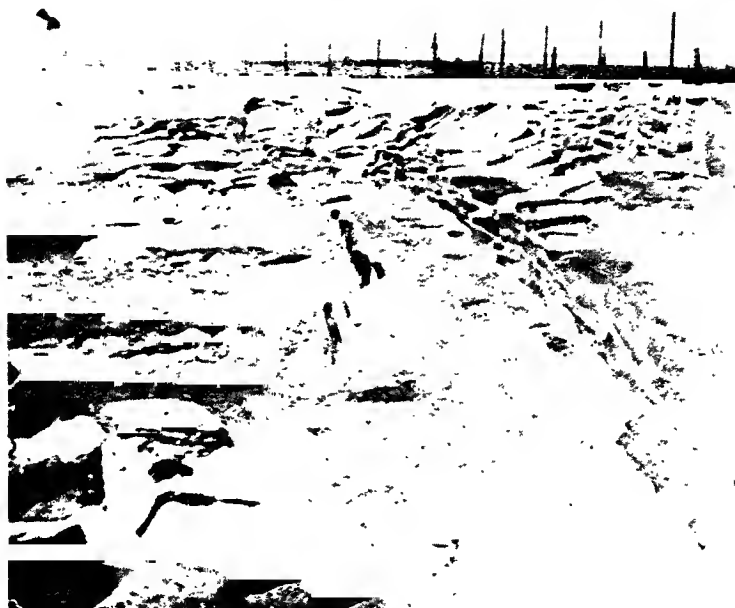


Fig. 8. Interior with Kerb of *Pallr* in centre.

suggested that a post had here been consumed by fire. The sites of the posts indicated on the Plan obviously belong to two periods, as previously stated, the two surrounded by stones on the floor of the *stofa* on the east side being secondary. A consideration of the others shows that while in the *stofa* the posts on the east side had been placed on, and at the edge of the *pallr*, those within the *eldhús* had occupied a more central position, the dwelling being narrower at that end. Within the *eldhús*, in the centre of the floor, was the fireplace, and beyond it the oven, partly inserted into the end wall as if to be surmounted by a chimney, or an aperture in the roof. The fireplace (fig. 9), which appeared to have been

constructed for the special purpose of heating stones to be used in the oven, was a small rectangular enclosure some 18 inches square, formed on either side with slabs of stone laid on the surface, and furnished with an opening in front for a flue, some 9 inches broad and 10 inches deep, paved on the bottom, and extending back for a distance of 4 feet 6 inches. The paving was in two layers, probably representing two periods of use. The



Fig. 9. Fireplace and Oven beyond.

back of the fireplace was formed with a slab rising to a height of 1 foot above the sole of the hearth, and set sloping backwards at an angle of some 50° from the perpendicular. Peat-ash was found upon this fireplace, but no food refuse.

The oven was an oblong box, in line with the fireplace, measuring 2 feet 7 inches in length, 1 foot 9 inches in breadth, and 1 foot 3 inches in depth. It had been formed in two horizontal sections, the lower consisting of single stones on each face, and the upper of smaller material. The stone which formed the front of the oven towards the fireplace, in the upper section was laid obliquely so as to meet the sloping back of the latter at its

apex, and at a similar angle. The floor of the oven was paved, and the walls were reddened and fractured by the action of heat. Within it were numerous burnt broken stones, of a size to be easily held in the hand, and a large quantity of fish-bones.

The combined arrangement suggested that the small fireplace, with its flue to increase the draught, had been formed for the purpose of heating

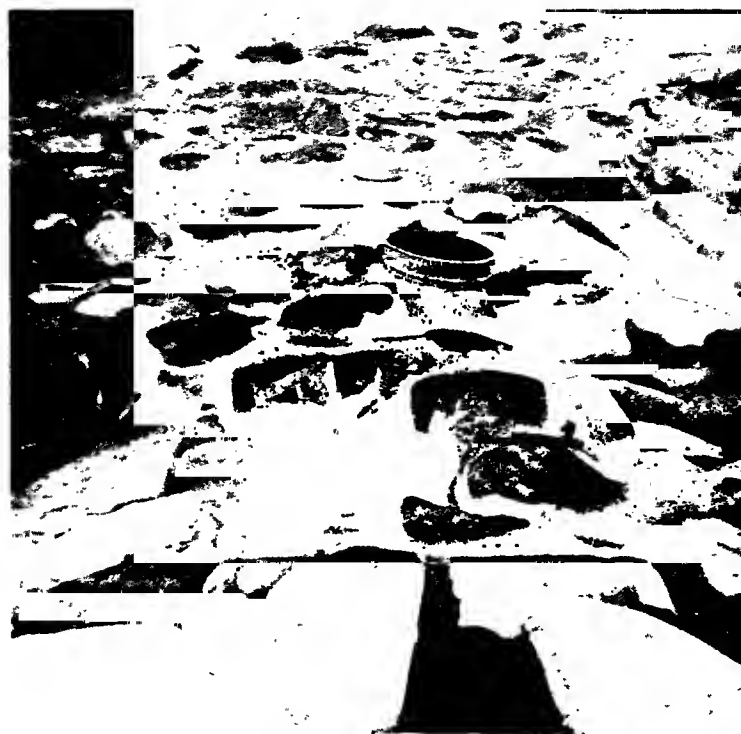


Fig. 10. The Oven.

stones to a red heat, and that the tilted slabs were so placed as to facilitate transference of the stones with the aid of a shovel from fireplace to oven.

The bones found consisted of remains of the Ling (*Molva vulgaris*) (occasional bones indicating specimens of enormous size), the Saithe (*Gadus virens*), and the Cod (*Gadus morrhua*). The Lythe, or Pollace (*Gadus pollachius*) was also represented but to a much less extent than the other fishes.

The method of cooking, or baking, after the heated stones had been transferred to the oven, was as follows. Above the stones was laid a layer of fresh, green vegetable material (in Shetland probably grass), and upon

this was placed the food—bread, flesh, or fish as the case might be. This in its turn was covered with another vegetable layer, over which a second layer of heated stones was spread, while in order to prevent escape of steam, a covering of earth, or possibly of turf, or peat, was placed on the top. This method, as still employed among primitive tribes, was probably



Fig. 11. Secondary Cross Wall in foreground.

in general use among the Norsemen.¹ Such ovens, or fireboxes, have been discovered in the early Norse houses in Norway,² Iceland,³ and Greenland.⁴

Two stones which project at a height of about 1 foot from the inner face of the east wall, at a distance of 2 feet to the left of the doorway on entering, are also a feature of the primary occupation, and may have been employed for the support of a seat.

The principal change in the history of the house during its second period was the construction of a wall across the interior a little to the

¹ Sigurd Grieg, *op. cit.* p. 92.

² Sigurd Grieg, *op. cit.*

³ Daniel Bruun, *Fortidsminder og Nutidshjem paa Island*, Copenhagen, 1928, p. 180.

⁴ Norland and Stenberger, *op. cit.*, pp. 53-63.

north of the centre (fig. 11), and the removal of the wall which previously formed the south end of the *eldhús*. The result of this was to reduce the length of the *stofa*, and increase that of the *eldhús* by some 9 feet 9 inches, approximately 3 metres, which thereafter probably became also the *skáli*, or sleeping room. The north end wall was at the same time moved back some 3 feet.



Fig. 12. Secondary Hearth in the *Stofa*.

With this change, which did away with the long fire on the floor of the *stofa*, two new hearths were formed, one at the south end of that chamber, and the other in the centre of the *skáli* some 8 feet distant from the partition, and facing towards it. The former (fig. 12) was a large hearth, measuring some 3 feet across the back, with the sides expanding outwards for a distance of 4 feet till they reached a width of 6 feet 6 inches, practically 2 metres, between their extremities. On the east side, close to the end of the "cheek," some thin slabs, placed parallel 2 feet apart, protruded from the floor, and may have been used to support a bench or table at the fire-side. At a distance of some 7 feet 9 inches out from the fire-

back there was a row of stones, firmly set in the floor, which might indicate the position of a seat, while just against the outer end on the east two slabs set on edge at right angles might have formed a small associated fireplace.

The hearth in the *skáli* (fig. 13) was much smaller and measured only 1 foot 9 inches across, and, approximately, as the outer stones had been



Fig. 13. Secondary Hearth in the *Skáli*.

displaced, 2 feet in depth. It had been set obliquely in the floor, but practically parallel with the main wall on the east, which curved inwards at this point, and so it was also in all probability parallel to the front of the *pallr*.

The last period showed the abandonment of the south portion of the dwelling beyond the partition wall, and the conversion of the remainder into a two-roomed house, using what had been the central partition wall for the end gable. The building was extended towards the north, and an end gable erected in a different style of construction, the supporting wall being only two stones breadth in thickness and without the central core of

earth. A side wall (fig. 14) towards the east was built partially upon the *pallr*, extending from the end of the partition wall, and a new cross wall was constructed somewhat to the south of the centre of this new dwelling. The original entrance on the east side was still in use, but a fresh opening was broken out some 9 feet to the north of the former. A quartz pebble



Fig. 14. Side Wall constructed upon the *Pallr* in the latest Period.

measuring 5 inches by $4\frac{1}{2}$ by $2\frac{1}{2}$ inches which had been used as a pivot stone, having a polished hollow $\frac{7}{16}$ inch in diameter in the centre, made by a metal pivot, was found just to the north of this opening at a level which must have approximated to that of the latest occupation, 1 foot above original floor-level.

The three periods are clearly indicated in the construction of the wall along the west side at the original termination of each. Moreover, the floor-levels at the north end tell the same tale. The base of the late end wall lies at a level of 25 feet 9 inches above ordnance datum, the foundation of the wall of the second period at 24 feet 9 inches, and that of the

original end wall at 23 feet 6 inches. Fig. 15 shows the north end of the dwelling with flooring stones of each period, *in situ*, marked respectively 1, 2, and 3.

Previous to the third period a drain, measuring some 8 to 9 inches in breadth and 1 foot in depth, was formed across the interior, brought from some building on the west. It was carried across the floor



Fig. 15. The North End showing *in situ* Flooring Stones of each Period.

of the *skáli* in the direction of the entrance, thence through the latter, and thereafter led off in a northerly direction, passing under the floor of the alley adjacent to the front of the building opposite. It was a rubble drain, and its floor, which was unpaved, at the point where it entered the *skáli*, was covered to a depth of 6 inches with a deposit of peat-ash burned to a brick-red colour, a condition entirely absent on the opposite side of the chamber. This circumstance indicated that the source of the drain was in some area where great heat had been generated. It was clear that the drain belonged to the second period, or to a date between it and the last, as a stone bonded into the latest period wall lay across one of the drain

covers. Also the stratification of the peat-ash deposit overlying it was homogeneous, and undisturbed, while a kitchen-midden, obviously referable to a later occupation, lay above it in the alley.

An indication of the existence of the building from which in all probability the drain emerged was furnished by the exposure of a corner of a structure projecting into the west wall of the *skáli*, and situated immediately in front of the modern mausoleum. The presence of such a drain, and the condition of the ash deposited within it, suggest the possibility of the remains of a bath-house existing nearby.

Partly covering the side entrance on the outside, and partly leaning against the face of the wall on the east, stood two large upright slabs, visible beyond the spade in fig. 5. They rested on a thin layer of soil covering the paving of the alley, which had been torn up in front of them. It was obvious that they had been erected in the position in which they were found to retain in place the refuse, consisting of fish-bones, peat-ash, broken steatite urns, etc., which composed the kitchen-midden filling the alley at this spot, and so prevent it falling back into the doorway.

The finding of quantities of comparatively small broken stones, which had evidently been split by heat, both in the area at the end of the house, and in two ovens, one of which has been described above, and the other, which, as it relates to the building to the eastward, will be described in next season's report, throws some light on the employment of such stones, and incidentally suggests a possible explanation of the numerous heaps of burnt broken stone to be found throughout the Shetland Islands, and to a less extent elsewhere.

Though the use of such stones for cooking was practised in Norway from the migration period in the fourth to fifth centuries of our era, such heaps of burnt stones are unknown in that country.

In primitive times there were two methods employed of cooking food with the aid of stones that had been brought to a glow-heat. In the earlier and prehistoric period the cooking was effected by dropping a pebble, or pebbles, into a vessel containing liquid to be heated, or food to be cooked, and covering it over with a stone lid. As pottery from domestic sites of prehistoric times is invariably encrusted with carbon only on the upper portion of the exterior, it is evident that the pots were plunged to at least one-half their depth in the embers—peat-ash, or whatever formed the base of the fire. This plunging afforded some support to the wall of the vessel, and prevented to some extent the fracturing of the pot when the stones were dropped in, as well as helping to maintain the heat. Such heated pebbles when dropped into cold liquid, or during the process of being heated, would frequently disintegrate. The stones so used are

known as pot-boilers. In such domestic sites as I have explored broken pot-boilers have been rather conspicuous by their absence, probably for the reason that having become useless they were thrown away.

The method of cooking practised by the Norsemen, and described above, was a totally different process. Small stones were required, and such as would heat readily, and it was desirable to have a stock always at hand. Such stone occurs in great quantities at Jarlshof on the east of the Norse occupation. Accordingly the following suggestion is here put forward merely for consideration. The stones to be used were gathered into heaps, and in order to bring them to the requisite condition of heat they were placed upon a fire of heather, or brushwood. This may account for the stratum of carbonised matter in which were numerous twigs of heather, which lay below the mass of burnt broken stones found above the pre-historic Dwelling No. v. described in my previous paper this session.

When the stones on the fire had been raised to a sufficient heat they would be fractured by throwing cold water upon them and thus causing a sudden contraction of the outer surface. The stones so broken up would be thereafter piled in heaps near where they would be afterwards drawn on as required. Possibly the mass of broken stone at the end of the Norse dwelling was the supply for the kitchen of the house, placed as coal might be in a dwelling at the present day. Such a theory gives an explanation of the reason why the heaps of burnt stones are so frequently found adjacent to water, viz. the need for a supply of water to throw on the heated stones in the first instance—though, possibly the vicinity of fresh water is merely an indication of the pre-existence of the dwelling-place in which the stones were used. It also explains the bays, or concavities frequently observed in the outline of such mounds, these being due merely to the abstraction of material. Finally, it is much more likely that these heaps represent stores of material for use than discarded refuse.

Among the relics recovered from the south end of the building were some two or three fragments of clay which had been transformed to a brick-like consistency by the action of fire (fig. 16). On one side these fragments bore deep parallel grooves, evidently produced by the action of human fingers pressed into and drawn along the material when it was soft. The smooth and slightly pitted appearance of the opposite face might well have been produced by the pressure of the clay against a built stone surface, and accordingly it seems probable that these pieces of burnt clay represented a lining which had been plastered on the interior surface of the walls to close the interstices between the stones, preserved in these

few instances by having been burnt. Remains of clay lining (*lerklining*) have been found in the ruins of similar early dwellings in Norway.¹

After the south portion of the dwelling had ceased to be occupied and become roofless, it was used for the deposit of peat-ash, and for some

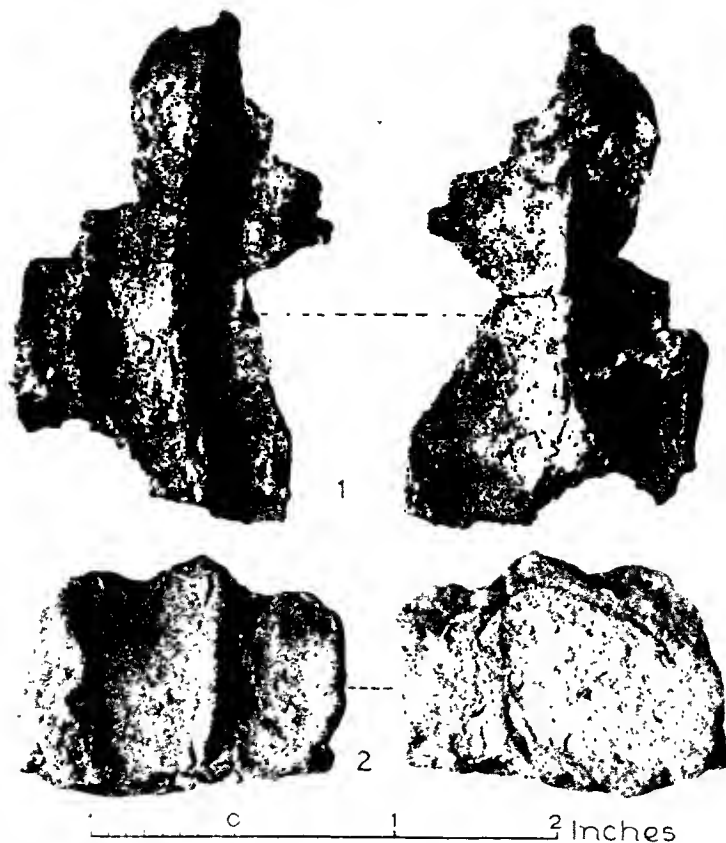


Fig. 16. Burnt Clay showing Impressions.

distance along the western side it was occupied by a midden, almost entirely consisting of shells of the common wrinkle (*Littorina littorea*).

The type of house represented by this building at Jarlshof, an oblong structure, with slightly rounded ends, and low walls, makes its appearance in Scandinavia just before the Christian era, and during the following centuries was in widespread use. It is chiefly represented in the south-

¹ See Sigmund Grieg, *op. cit.*, p. 86, and Jan Petersen, *op. cit.*, p. 79.

west part of Norway and in the islands of Oland and Gotland in the Baltic.¹ Numerous ruins have been excavated in Norway in recent years by Dr Jan Petersen² and by Dr Sigurd Grieg.³ The plan also suggests some possible relation with certain oblong galleried structures, or "wags," in Caithness,⁴ at one end of the scale in this country and at the other with the still extant Black Houses of Skye and the Hebrides, but which formerly existed likewise in Caithness and Sutherland.

In conclusion, it may not be amiss to state briefly the most recent view of the circumstances connected with the Norse immigration into Shetland and Orkney.

Norway was a poor country, rocky and mountainous, with little land that could be profitably turned to the uses of agriculture. It possessed, however, two potential sources of wealth in the forests that clothed so much of its surface, and in the iron that was to be won from its peat-bogs. On these foundations the Norwegian peasant raised a civilisation which, if it lacked the refinement of that of classical lands, had a virility and a richness of its own. From the iron he fashioned a type of axe which was serviceable either as a tool for the woodman, or as a weapon for the warrior, and with this he hewed down the oaks and pines in the forests, splitting them into planks, and so brought about the first construction of the clinker-built boat.

This achievement increased the trading facilities of a maritime race, and sent its seamen in the early Middle Ages to traffic over far distant waters.

For some reason which is obscure, but possibly not unconnected with the development of their carrying trade, and iron industry, the Norwegian peasants prospered, and their numbers increased. Forests were cleared, and the area under crops was greatly extended. Whether because the population became too large for the land to support, or for some other less obvious reason, the period of prosperity culminated in a great wave of peasant migration to the nearest accessible lands across the North Sea, to Orkney and Shetland, and to the Hebrides. This movement took place between the years A.D. 780 and 850, and was presumably thereafter followed by another to the Faroes and Iceland during the reign of Harald the Fairhaired between the years A.D. 870 and 930.

Moreover, one result of the struggle in Norway between King Harald and his nobles, culminating in the defeat of the latter at the battle of Hafrsfjord, about the year A.D. 900, was a great exodus to the Orkneys

¹ Norland and Stenberger, *op. cit.*, p. 57.

² *Op. cit.*

³ *Op. cit.*

⁴ *Third Report of The Royal Commission on Ancient, etc. Monuments, etc. of Scotland (County of Caithness, s.v. "Galleried Dwellings").*

and Shetlands, when many powerful men sailed as Vikings to the west. During the winter months they made their abode in the islands, but in summer they indulged in raiding. With the actual colonisation of the islands this last invasion had no connection, and the Viking raiders were probably as troublesome to the settlers as they were to the inhabitants of Norway and elsewhere.¹ And so in due course Orkney and Shetland became part of the realm of Norway, and subsequently of the United Scandinavian kingdom under the crown of Denmark. When, however, James III. of Scotland married Margaret of Denmark they were transferred to Scotland, as pledge for part of the bride's dowry, and failing fulfilment of the obligation, in 1472 they were formally annexed by the Scottish Crown.

THE RELICS.

The relics recovered were numerous and present a fair representation of associated objects in everyday use in a Norse dwelling, which will supplement the collections of personal belongings produced from graves, of which there is a considerable collection in the National Museum of Antiquities.

They were, with the exception of a few from approximately high levels, derived from three principal sources. These were, first, the kitchen-midden beyond the north-west end of the dwelling, which, in all probability, was referable to the earliest occupation; secondly, the midden situated in the alley-way, and partially blocking the side entrance, which obviously belonged to a later period of occupation; and lastly, the interior of the house itself, and the wall-heads, from which relics of all periods might be included.

The greater part of the finds from the north-east midden came from a depth of from 3 to 4 feet below the surface, and so were obviously of one period. No midden has been identified as particularly referable to the second period, though possibly that in the alley-way belonged to it. The relics from each group are treated separately in the following notes.

RELICS FROM THE NORTH-EAST MIDDEN.

Bone Implements. Two blunt-pointed awl-like objects (fig. 17, Nos. 2 and 5), both of which have been socketed, measuring respectively $3\frac{5}{8}$ inches and $4\frac{1}{8}$ inches in length.

¹ See A. W. Brögger, *Ancient Emigrants: A History of the Norse Settlement of Scotland*, Oxford, 1929, pp. 5-8, from which the foregoing facts are taken; also T. D. Kendrick, *A History of the Vikings*, London, 1930.



Fig. 17. Implements of Bone from the North-east Midden.

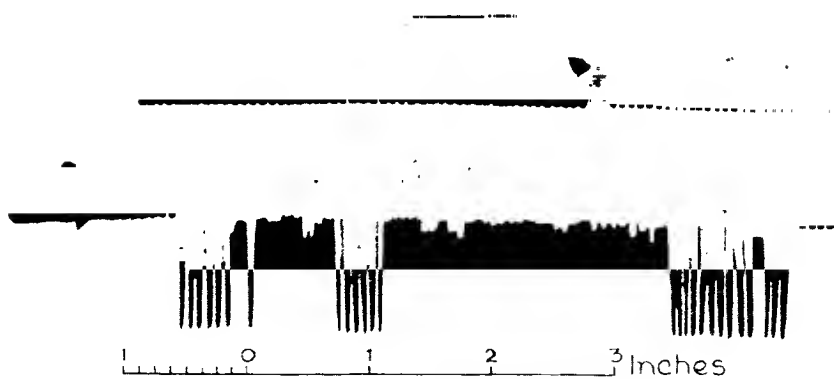


Fig. 18. Two Sides of one of a pair of long Combs.

Bone (fig. 17, No. 6) which has been rubbed down to a point from one side. It measures $6\frac{1}{8}$ inches in length.

Small ferule or socketed point (fig. 17, No. 3), measuring $1\frac{3}{4}$ inch in length.

A portion of the antler of a red deer (*Cervus elaphus*) (fig. 17, No. 4), which appears to have been fashioned to be inserted in some other material or in the ground, one end being sharply pointed, as if to serve the purpose of a support. It measures $5\frac{1}{2}$ inches in length.

Bronze. —Two fragments of thin sheet bronze were found on this part

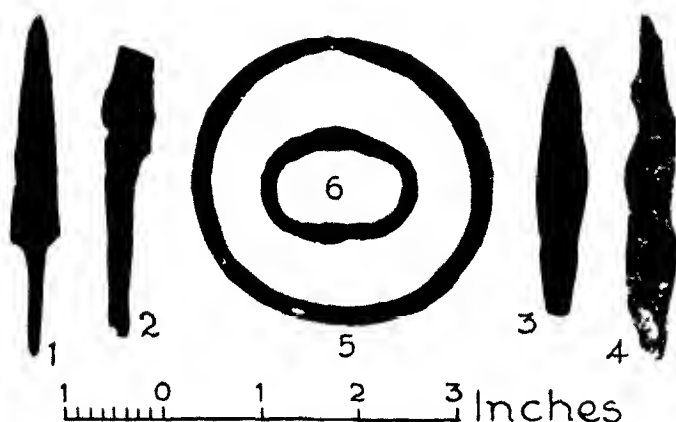


Fig. 19. Iron objects: Knife-blades, Rings, etc.

of the site, but as this material was met with all over the ground it will be treated of generally hereafter.

Combs. —The remains of a pair of long hog-backed combs of bone with the teeth on one side only, and ornamented with a panel across the centre of the bow filled with interlaced ribbon work, from which extend along the mesial line to either end diminishing panels similarly filled (fig. 18). The combs finish at each end with a zoomorphic terminal. When complete they have measured 6 inches in length.

The type is well known and specimens have been found connecting them with the pagan period of Viking culture in the ninth century. A pair of such combs was among the relics recovered from the Oseberg ship burial,¹ preserved in the University Museum at Oslo. Another pair was found associated with brooches in one of the graves discovered at Pierowall, in the island of Westray, Orkney.² A portion of another found in

¹ Brögger and Schetelig, *Oseberg Fundet*, vol. ii, No. 156, fig. 137.

² Joseph Anderson, *The Orkneyinga Saga*, p. cxxii.

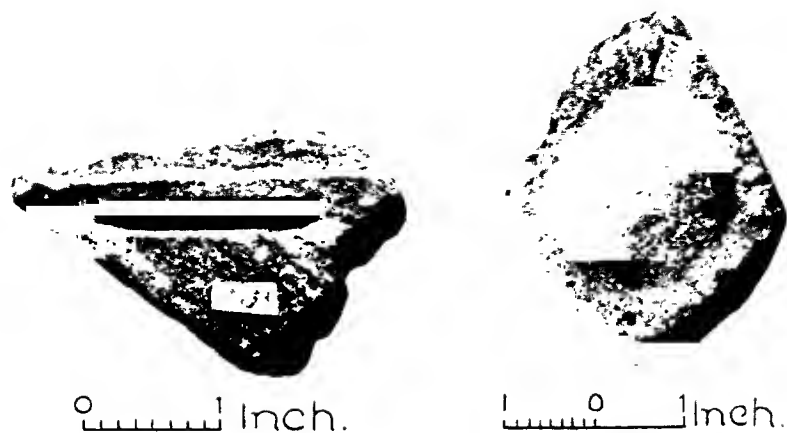


Fig. 20. Mould. Lamp.

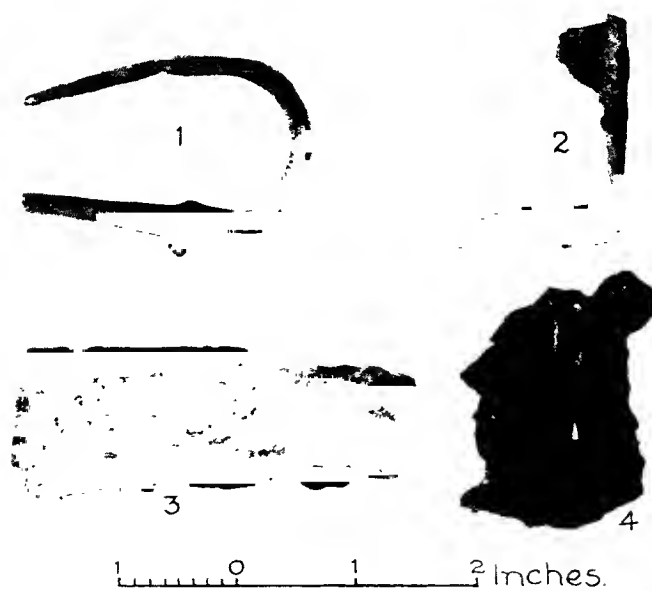


Fig. 21. Parts of Padlocks.

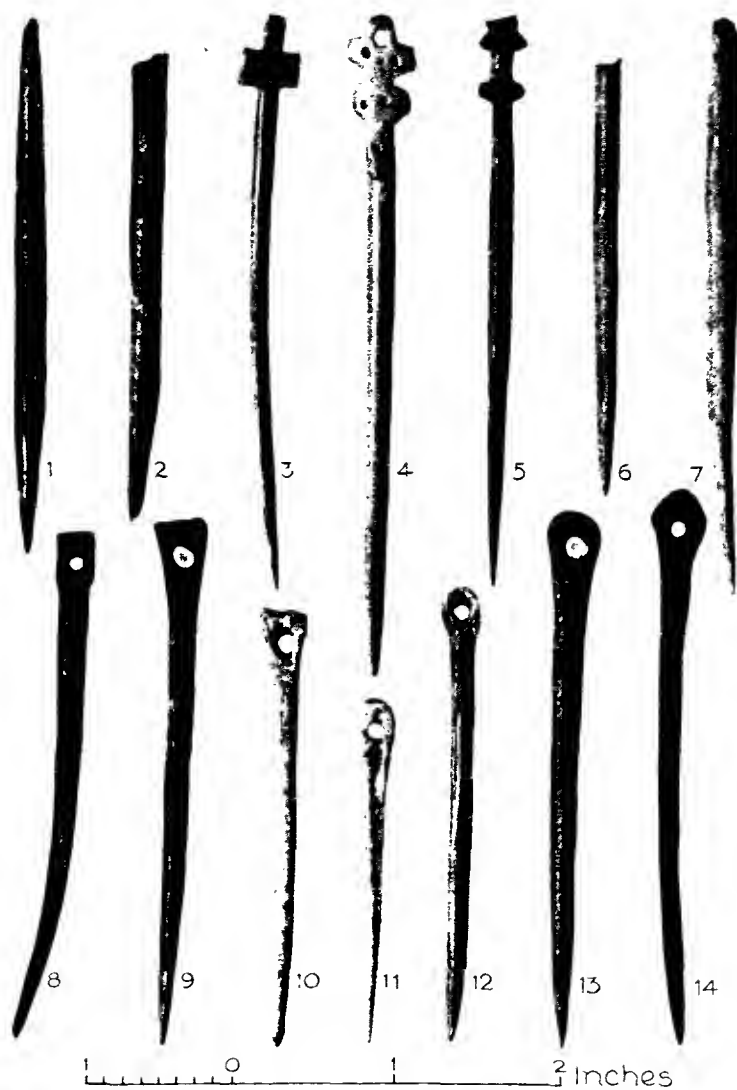


Fig. 22. Collection of Bone Pins and Bodkins.

a tumulus at Lyking, Orkney, with an iron buckle and spear, is preserved in the National Museum of Antiquities.

Knife-Blade.—The blade of a small iron knife with a tang, a sharp point, and, apparently, a hollow on the back was found in a much corroded state (fig. 19, No. 4). It measures $3\frac{1}{2}$ inches in length.

Lamp.—A small lozenge-shaped lamp fashioned from a piece of steatite (fig. 20), measuring $3\frac{3}{4}$ inches in length.

Mould.—A mould of steatite for casting a small ingot $1\frac{5}{8}$ inch in length (fig. 20), also a fragment (not illustrated) of a mould of clay for casting a pin.

Padlock.—A cylindrical padlock of iron with longitudinal ribs of bronze or brass, much corroded (fig. 21, No. 3).

Pins.—The midden yielded a remarkable collection of bone pins, or bodkins (fig. 22, Nos. 1–14). The majority of these have simple straight or rounded heads, but three have cruciform terminations (Nos. 3, 4, and 5). No. 8, with a square head, is closely paralleled by a bodkin found at Brattahlid.¹ They vary in length from $2\frac{1}{8}$ inches to $4\frac{1}{8}$ inches. No. 4, the largest and most ornamental, is highly polished.

Spoon of Bone.—Fig. 17, No. 1, shows a spoon of bone, imperfect, a portion of the bowl being broken off. The bowl is very flat. As existing, the spoon measures $7\frac{1}{8}$ inches in length. In the National Museum in Oslo there is a unique spoon made of iron with an oval bowl found in a Viking grave in Gubransdal, and dating from the ninth century. In the Scottish National Museum of Antiquities there are two small spoons of bone from the Borness Cave, where the presence of Samian ware indicated a date of occupation early in the Christian era.

Stone Discs.—Several fashioned discs of stone were recovered varying from $1\frac{1}{8}$ inch to 2 inches in diameter and about $\frac{3}{4}$ inch in thickness, the purpose of which is not apparent.

Turn-Buckles or Snecks.—One complete turn-buckle of bone (fig. 23), measuring $4\frac{5}{8}$ inches in length, and one half of a smaller one, were found. The larger sneck has a slight concavity $2\frac{3}{16}$ inches in diameter on the under side as if it had been used to turn on to top of some discoid object with a convex section.

Whorl. One half of a large flat whorl.

RELICS FROM THE MIDDEN IN THE ALLEY-WAY.

Bowl of Steatite. An oblong bowl of steatite (fig. 24), measuring 11 inches by 8 inches, imperfect at one end; found among fish remains.

¹ *Op. cit.*, p. 136, fig. 102.

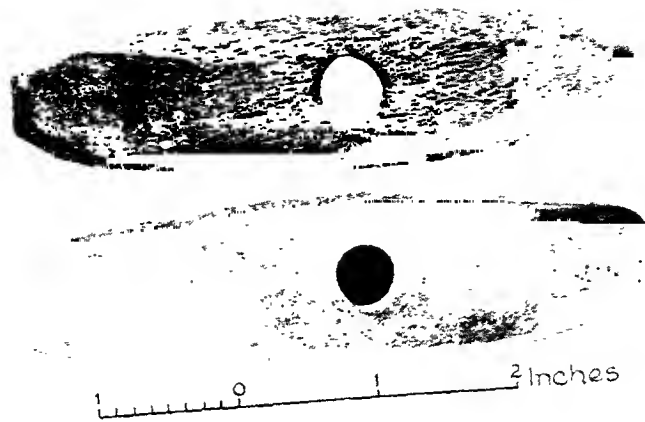


Fig. 23. One of two Turn-Buckles or Snecks of Bone.



Fig. 24. Bowl of Steatite.



Fig. 26. Pins of Bone.

In the University Antiquarian Museum at Oslo is a similar bowl found with a Viking sword and dating from the last part of the tenth century, to which period this type appears to belong.

Bronze.—A fragment of thin bronze sheet, with a rivet hole through it.

Iron Bolt-head, lozenge-shaped, of the form employed in the construction of Viking ships, examples of which are shown in fig. 36.

Padlock Bolt of Iron (fig. 21, No. 1), $2\frac{1}{2}$ inches long.

Pins.—Three pins of bone (fig. 26, Nos. 1, 2, and 4). They are quite simple, except No. 4, in which the head is flat and expanded to one side.



Fig. 27. Terminal, Dress Fastener, and Playing-piece of Bone.

Playing-piece.—A conical playing-piece of bone (fig. 27, No. 3), measuring $1\frac{3}{16}$ inch in height and $1\frac{7}{16}$ inch in greatest diameter.

A similar playing-piece found in a grave of the pagan period in Iceland is illustrated by Daniel Brunn.¹

Punch of Iron (fig. 19, No. 3), measuring $2\frac{3}{4}$ inches in length.

Whorl of Lead.—A small whorl of lead, in form a truncated cone, measuring about $\frac{3}{4}$ inch diameter at base (not illustrated). This type of whorl dates from Viking times.

RELICS FROM THE INTERIOR OF THE HOUSE AND THE ADJACENT WALL-HEADS.

Armlets of Jet.—Two small segments of armlets of jet, or cannel coal, are shown in fig. 28, Nos. 12 and 13. No. 13 is perforated as if for wear

¹ *Op. cit.*, p. 76.

as a pendant. Another fragment similar to No. 12 was also recovered. These three segments were all found at or near floor-level in the southern section of the house, and so presumably belonged to one of the earlier periods of occupation.

Such armlets are occasionally found in graves of the pagan period.

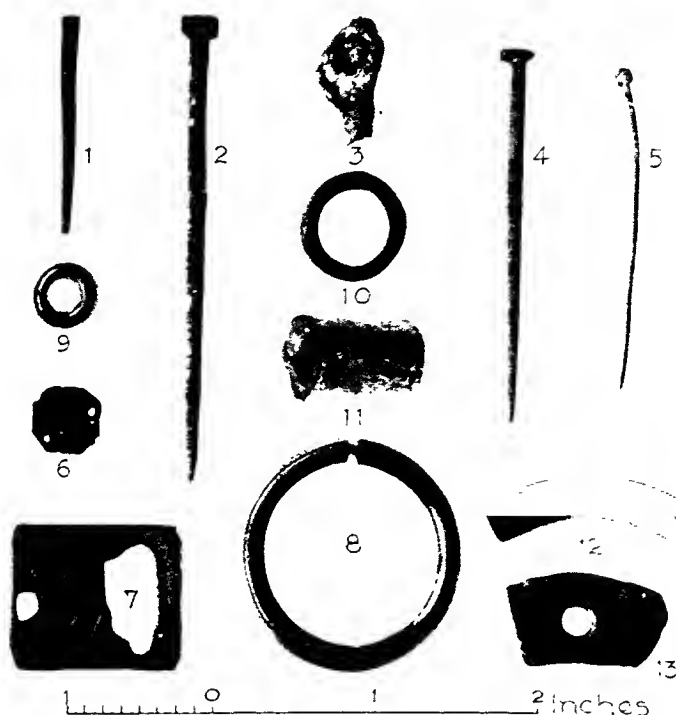


Fig. 28. Miscellaneous Relics from the Interior of the Dwelling and the Wall-heads.

One was recovered with the pair of fine bronze tortoise-brooches from Castletown of Wick, near Thurso, while another was found with a pair of brooches of similar type and a blue glass bead near the broch of Laminess, Island of Sanday, Orkney. Both are preserved in the National Museum of Antiquities.

Beads.—Five beads were discovered in the course of the excavation. Only one of these was of glass (fig. 28, No. 9). It is of dark blue colour, similar to the bead referred to above from the Island of Sanday. It was found at floor-level near the centre of the dwelling. Of the other beads, all with one exception are of stone, and are discoid, except one, not illustrated,

which is flat on either surface and polygonal. Only one (fig. 56. No. 10) was found within the dwelling and that near the centre at floor-level. The others, including one made from a section of a bird bone (fig. 28. No. 11), were found searching for the wall-heads.

Bone Implements.—The three bone implements found are illustrated in fig. 29. No. 1, which is made from the metatarsal of a small pony.

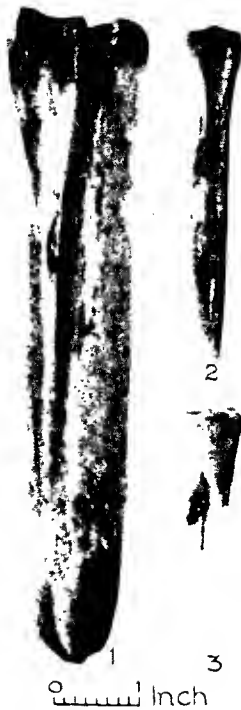


Fig. 29. Bone Implements from Interior of House.

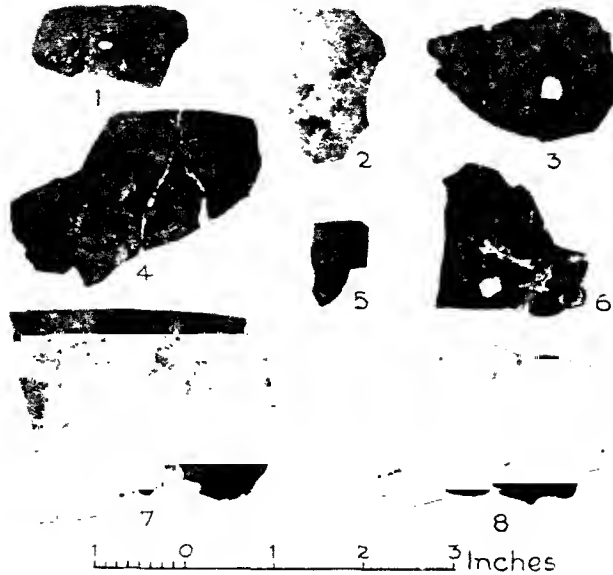


Fig. 30. Fragments of Sheet Bronze.

probably of the Shetland type, is worked to a blunt rounded end. It was found not far below the surface. The other two specimens appear both to have been employed as awls, and were found at floor-level.

Bronze.—Throughout the excavation seventeen pieces of thin sheet bronze were discovered, and, while single specimens were found in both of the middens, no less than fifteen were recovered from the interior of the dwelling and the wall heads (fig. 30). The fragments were sometimes very small and much decayed: frequently they were pierced by a rivet hole, and in one example, No. 7, a small paper-fastener rivet may be seen, while

No. 5 shows a similar rivet detached. The largest specimen measured some 5 inches by 4 inches superficially. Though the find spots were generally confined to floor-level, and the situations referable to the earlier occupation, the largest piece was found when deturfing, and one or two other specimens were found above the floor. Nor did any example from its form give any indication of the purpose it had served other than its use as a plating for some indefinite object.

Brooch.—A penannular brooch of brass, plano-convex in section, with a

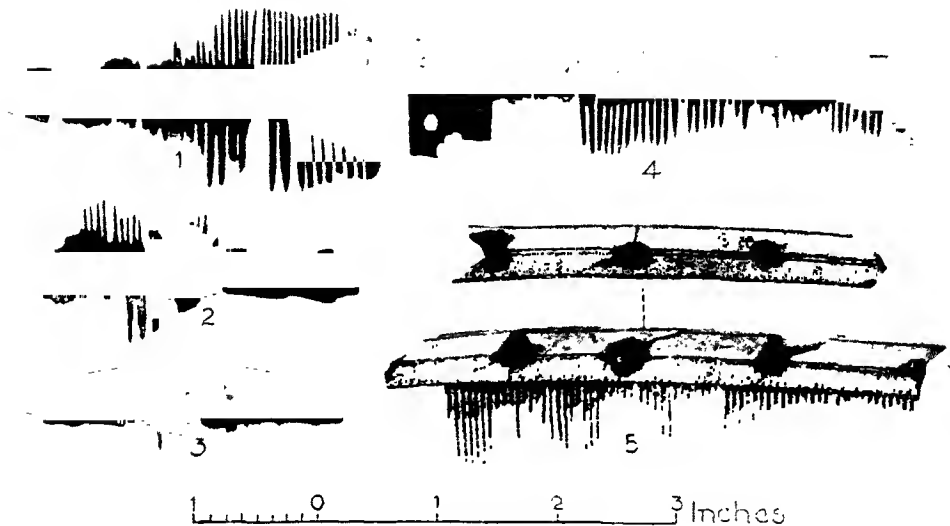


Fig. 31. Combs of Bone.

narrow band of arrow-point ornament around the outer edge (fig. 28. No. 8), was found on the top of tumbled stones in the south-east section. It is probably of comparatively late date.

Combs.—Four combs of bone were found within the dwelling, and are illustrated in fig. 31, Nos. 1-4.

No. 1 is doubly toothed, with larger teeth on one side than on the other. It has terminated at either end in a plate of bone fashioned like a butterfly with expanded wings, and is decorated with dot and circle ornament. The plate, which keeps the sections of bone from which the teeth are cut in position, is freely studded with bronze pins. It was found in the central section actually below floor-level. When complete it has measured $3\frac{3}{8}$ inches. Combs of similar type were found, respectively, in the brooch of Carn Liath, Sutherland, on the sands of Bracon,

North Yell, Shetland, and at Freswick, Caithness, and are preserved in the National Museum of Antiquities.

No. 2, which is very imperfect, has also been a double comb and may have been similar to No. 1. It was found while clearing off soil from 8 inches to a foot above floor-level.

No. 3, a comb with an arched bow and teeth on one side, very imperfect, was found in the central section above floor-level.

No. 4, which is a straight-backed comb with teeth confined to one side, and prominent bronze studs along the bow, measures $4\frac{3}{8}$ inches in length, and was found lying on the top of a stone at floor-level in the south-east section of the dwelling, so probably belonged to the earlier periods of occupation.

Crucible.—Fig. 32 shows a portion of a small crucible, in form cup-shaped, with a pointed base, found at the south end at floor-level.

Cruisie, Lid of.—An object fashioned in stone, of pointed pear-shape, and measuring $3\frac{1}{8}$ inches in length and breadth, worked to a smooth surface on one face and left rough on the other: judging from its shape may have been the lid of a cruisie when the latter was out of use (not illustrated).



Fig. 32. Fragment of a Crucible.

Discs of Stone.—Several small discs of stone, measuring each about $1\frac{1}{2}$ inch in diameter and up to $\frac{7}{8}$ inch in thickness, were found on the floor-level. They may have been employed in some game.

Flint Core.—A small conical core of yellow flint from which flakes had been struck, measuring 1 inch \times $\frac{1\frac{3}{16}}$ inch, was found at 1 foot 6 inches above floor-level, an obvious intrusion from an earlier age.

Hones.—The most numerous class of relics found were the hones or sharpening-stones. Of these, whole and imperfect, a score were recovered in the dwelling. Those that call for any comment can be divided clearly into two classes: (1) Hones of a dark slatey stone, quadrangular in section, tapering sometimes markedly to one end, and always perforated, obviously for suspension. This type is well illustrated by fig. 33, No. 1. It is not infrequently found associated with other relics of the Norse pagan period in Viking graves. One was discovered in a Viking grave at Reay, Caithness in 1926.¹ (2) Hones of larger size, illustrated in fig. 34, which have a haunch-like expansion at one end as if to provide a grip. This type, which does not appear to have been found in Viking graves in this country,

¹ *Proceedings*, vol. lxi, p. 206.



Fig. 33. Hones perforated for Suspension, and a Polisher (No. 7).



Fig. 34. Haunched Hones.

is represented from such sources in the Museum at Stavanger in Norway, where, in fact, its occurrence is more frequent than that of the small black pierced hones.

Iron Fish-Hook.—A fish-hook (fig. 35), with an eye pierced through the shank, and measuring $2\frac{1}{16}$ inches in length, was found in the opening made through the east wall towards the north end, and so obviously belonged to the last period of occupation, or later.¹

Iron Rivets.—Such objects with lozenge-shaped heads, were of fairly frequent occurrence (fig. 36, Nos. 1–5). The presence of these within the house was probably due to the use of discarded boat-timbers in which they were fixed, for consuming on the fires, and not for structural use in the building, as tree-nails only were so employed, iron never being used by the Norwegian craftsmen in timber construction when wood would serve his purpose.²

Iron Tooth of a Hackle for Combing Flax.—One such object (fig. 37) was found. It measures $4\frac{7}{8}$ inches in length and is much corroded.

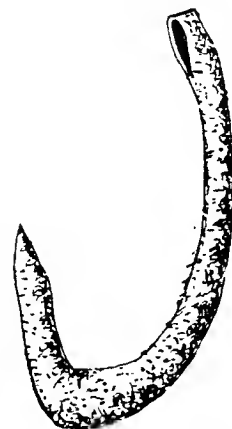


Fig. 35. Fish-hook of Iron. (1.)

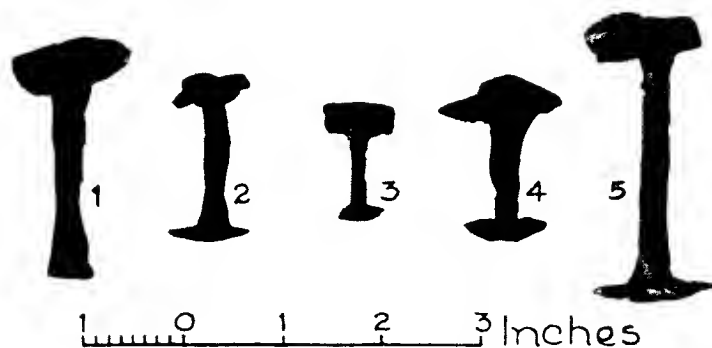


Fig. 36. Iron Ship-bolts with Lozenge-shaped Heads.

In the Norwegian Museums at Oslo, Bergen, and Stavanger there are numerous spikes from such hackles.

Loom-weights : Line-sinkers.—Chiefly within the dwelling, but to a lesser extent also in the middens, there was found a large number of oval pebbles perforated at one end. Such pebbles found within a dwelling are

¹ This illustration is from a sketch made at the time of discovery as the object disintegrated somewhat under treatment.

² I am indebted to Dr Schetelig for this information.



Fig. 37. Tooth of Hackle.



Fig. 38. Loom-weights.

regarded in Norway as loom-weights rather than net-sinkers, and in evidence of this view there is a collection found in a woman's grave preserved in the Museum at Bergen. From Jarlshof came over 150 examples, of which 136 were ordinary pebbles, 10 were shaped to some extent, and



Fig. 39. Loom-weights.

4 were grooved for a cord. Some examples are shown in figs. 38 and 39. In the former are plain pebbles, in the latter examples showing distinct features. Fig. 39, No. 1, is imperforated, but has two encircling grooves

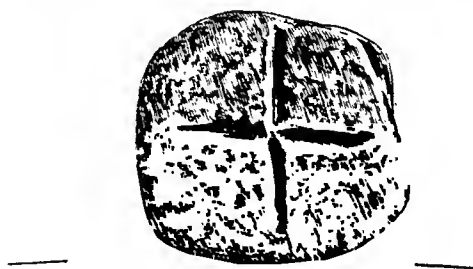


Fig. 40. Base of Weight. (1.)

for a cord to rest in. No. 2 has been shaped at the sides. In the centre of No. 3 has been cut a small matrix for casting an ingot, possibly of silver. On the butt end of No. 4 is cut a cross (fig. 40), which suggests its use as a weight to a bismar. No. 5 is probably a line-sinker, having a resemblance to the leaden object used at the present day. Fig. 41 shows

an example on which there appears on two faces some rude attempt at ornament done in graffito. On the face shown on the left of the illustration there may be seen towards the top of the stone a device resembling a bent human arm, or possibly merely a dog-tooth design. The scratchings near the centre of the right illustration are even more difficult to determine.



Fig. 41. Loom-weight with Graffito on Two Surfaces.



Fig. 42. Bronze Padlock Key.

Padlock and Key.—The iron bolt of a padlock (fig. 21, No. 2), much corroded, was found in the south-east section, and not far distant in the same section and at floor-level was discovered a bronze key, 4 inches long (fig. 42) for a well-known type of mediæval padlock. An example found at Vangnes, Balestrand, in a tumulus with a polisher and a piece of a sword, etc., is illustrated by Rygh.¹

Playing-men.—In the central section of the house at floor-level, and just to the north of the position of the drain, there were found lying

¹ Norske Oldsaker, 2nd Iron Age, No. 456.

close together fifteen small, flat, round, white pebbles of quartz which presumably had been used as playing-men (fig. 43).

Another collection of seven similar pebbles was found, also at floor-level, in the south-east section.

Pins of Bone.—Only one bone pin (fig. 26, No. 3) was found within the house. It came from near floor-level in the south section.

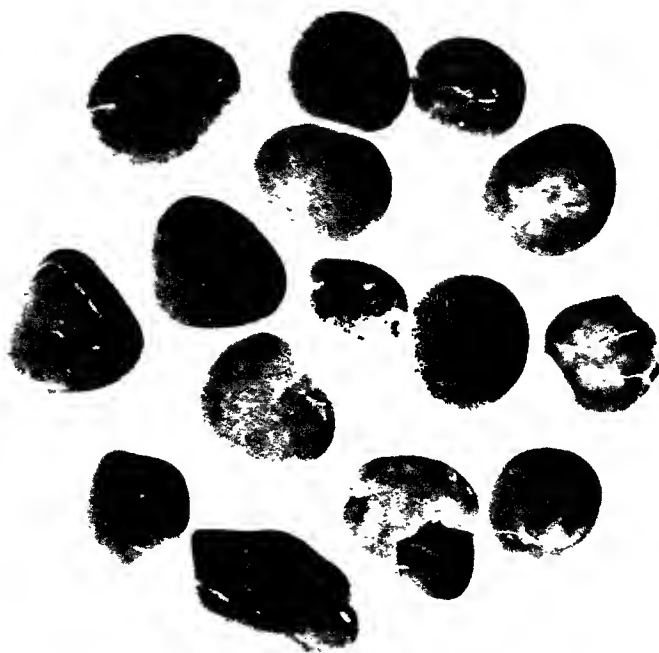


Fig. 43. Quartz Pebbles probably used in a Game. (1.)

Pins of Bronze.—Two complete pins of bronze, and remains of three others were found, and are illustrated in fig. 28, Nos. 1-4 and 10. Of the former, one (fig. 28, No. 2) is hammer-headed, and the head is enriched with dot and circle ornament on the sides and on the ends. It measures 3 inches in length. A similar pin with the same ornamentation, but on the sides of the head only, was found in an earth-house at Galson, Borne, Lewis, and is preserved in the National Museum of Antiquities. Another, unornamented, likewise in the Museum, came from a shell mound at Knap, also in the Island of Lewis.

The other complete pin (No. 4) measures $2\frac{1}{4}$ inches in length and appears to be unique. In lieu of the oblong block, or hammer, which

surmounts the pins above mentioned, there is here a zoomorphic terminal which seems to represent the head of a dog. It is shown enlarged in diagrammatic section in fig. 45, No. 1. If this object is referable to Viking times the dog's head may have reference to *Vigi*, the faithful hound of Olaf Trygvason, but as it was found not far below surface-level its association is not assured. In its general form, however, the pin bears a close resemblance to No. 2.

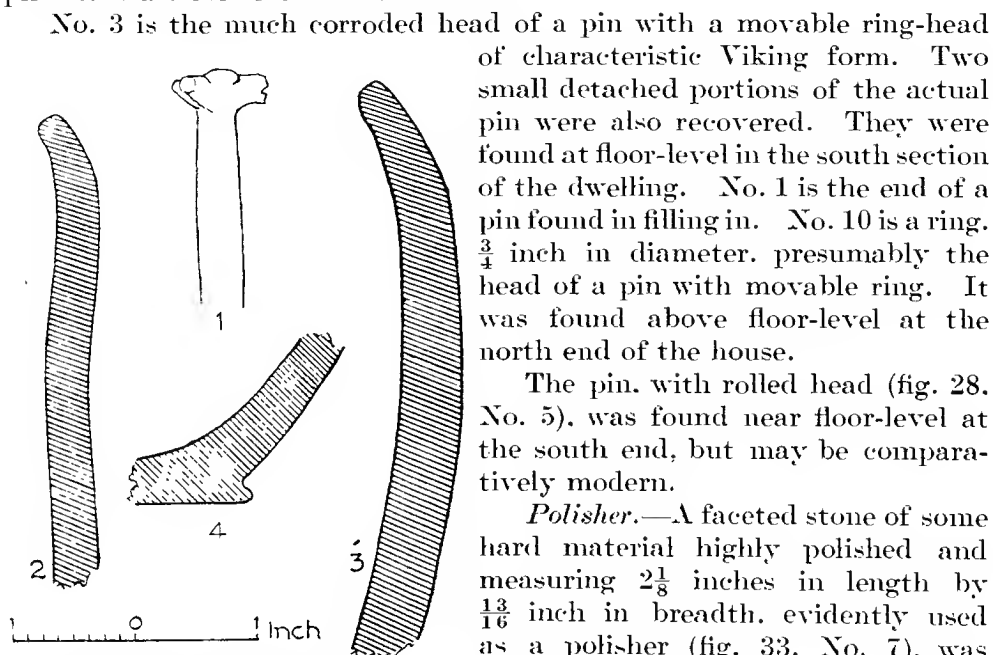


Fig. 45. Sections of Potsherds and diagrammatic Drawing of Pin-head.

No. 3 is the much corroded head of a pin with a movable ring-head of characteristic Viking form. Two small detached portions of the actual pin were also recovered. They were found at floor-level in the south section of the dwelling. No. 1 is the end of a pin found in filling in. No. 10 is a ring, $\frac{3}{4}$ inch in diameter, presumably the head of a pin with movable ring. It was found above floor-level at the north end of the house.

The pin, with rolled head (fig. 28, No. 5), was found near floor-level at the south end, but may be comparatively modern.

Polisher.—A faceted stone of some hard material highly polished and measuring $2\frac{1}{8}$ inches in length by $\frac{13}{16}$ inch in breadth, evidently used as a polisher (fig. 33, No. 7), was found at floor-level in the central section.

Rosette of bronze (fig. 28, No. 6) is a small rosette pierced with two pin holes, and measuring $\frac{1}{2}$ inch in diameter, which came from the central section at 10 inches above floor-level.

Pommel, or Terminal of Bone.—A hemispherical object of bone (fig. 27, No. 1), measuring $1\frac{1}{4}$ inch diameter at base and $1\frac{1}{16}$ inch in height, and perforated, the purpose of which is not apparent, was found 1 foot below the surface at the north end, and consequently must be of later date than the dwelling.

Pottery.—Numerous sherds of pottery were found chiefly within the house. Wherever found they appeared to be of uniform character, sherds of rude hand-made vessels, built up in zones after the manner of prehistoric pots as shown in fig. 44, No. 1. No vessel was sufficiently

represented to admit of reconstruction, or to permit of a complete section being made. Fig. 45. Nos. 2 and 3. shows two rims in section, indicating the usual forms, and No. 4 in the same fig. indicates the flat character of the base. The body of the ware is very distinctive, and differs from

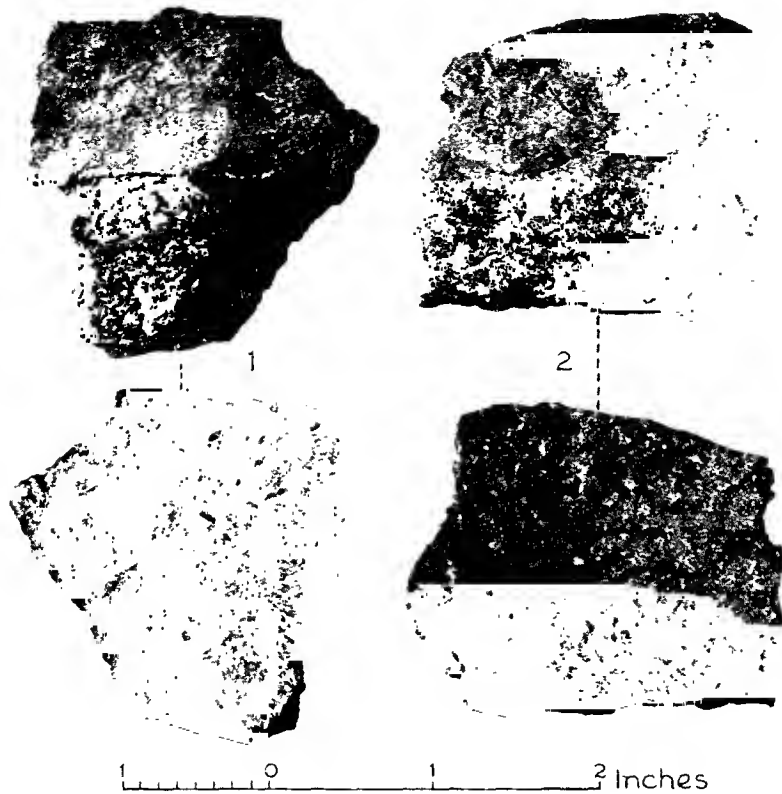


Fig. 44. Typical Potsherds.

the hand-made pottery of earlier times in the amount of vegetable matter which has been employed in its construction, and which is still represented by the forms of grass and seeds to be seen within it (fig. 44. No. 2). Pottery of this period is not of common occurrence in Norway. An example in the University Antiquarian Museum at Oslo (c. 23865 of that collection) from a Viking grave at Hollen is a bowl with rounded base.

Some sherds of pottery in the National Museum of Antiquities from Freswick, Caithness, appears to be of similar consistency.

Quern.—Only one small fragment of a quern for grinding grain, and that of the rotary type, was found. It was of garnetiferous quartz.

Slate and Stone Tablets worked in Graffito.—Scattered over the dwelling, chiefly at floor-level, but in one or two instances above it and even on one of the wall-heads, there was found a number of fragments of thin tablets of slate or stone on which designs, rude attempts at ornament, or mere casual scorings, had been produced in graffito by means of a stylus, or some other pointed implement. Most of the tablets had been broken in pieces, and in no single instance were all the fragments recovered to make possible a complete restoration. This is not surprising, as the slates were thin: often broken into small pieces; and lying for the most part in a milieu of soil mixed with peat-ash, and blackened with soot and refuse. The wet weather, moreover, which prevailed for most of the period of the excavation, also interfered with the use of the riddle. In all some fifty inscribed stones were recovered. Of these many of them bore just a few apparently meaningless scratches, but all on which the graffiti are of consequence have been reproduced in illustration by means of photographs and drawings in figs. 46 to 54.

The most notable example (figs. 46 and 47) is a tablet measuring 7 inches in length by 2 inches in breadth, on which is clearly depicted, in diagrammatic style, a Viking ship with high curving prow and stern, mast and rigging, and broad steering oar to starboard at stern. The hull is represented by a single line, and rising from it ten pairs of vertical strokes indicate the oarsmen, two to each thwart. Three oblique strokes abaft the rudder appear to indicate three men leaning on the tiller, while a single line between the oarsmen and the steersmen evidently shows the skipper in control. A criss-cross device produced on the reverse is also shown in figs. 46 and 47. This relic was found at floor-level in the central section of the dwelling.

The type of ship represented is that found at Kvalsund, in Möre, Norway, the remains of which are preserved in the Bergen Museum.¹ This boat, besides being similar in form, had an equivalent equipment of rowers, and thus probably corresponded fairly closely in dimensions to the ship represented on the Jarlshof tablet. It measured 18 metres (59 feet 7 inches) in length, 3.20 metres (10½ feet) in greatest breadth, and 0.885 metre (3 feet) in depth from the underside of the

¹ An illustration of a model may be seen in Professor Schetelig's *Oldtidens Fartøier*, fig. 6, *Saertryk av Nordisk Kultur*, xii.

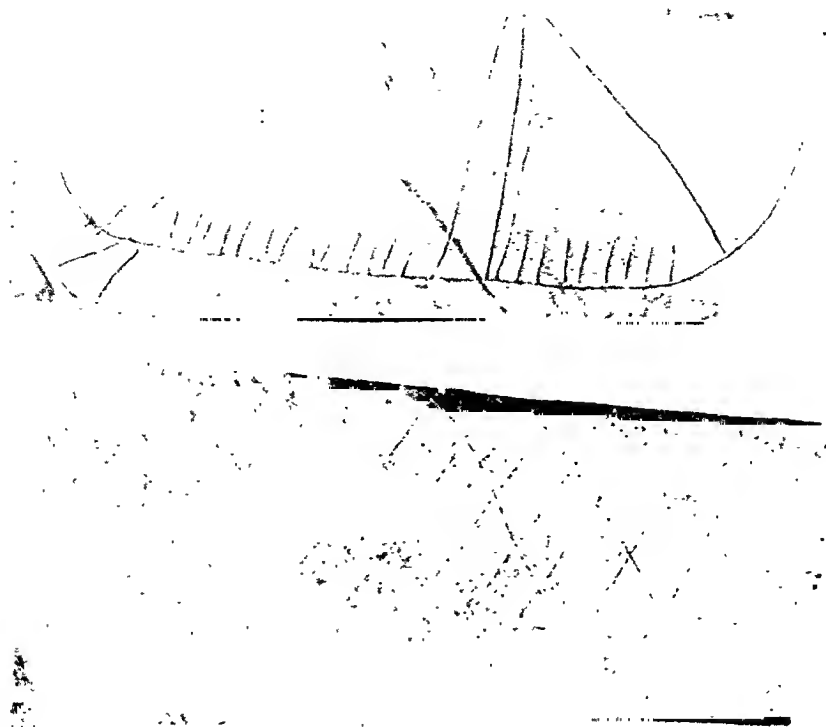


Fig. 46. Tablet with Drawing of Viking Ship on Obverse and Criss-cross Ornament on Reverse. ($\frac{1}{2}$.)

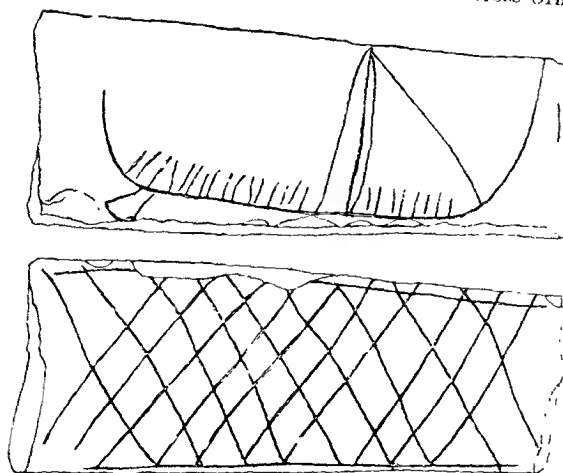


Fig. 47. Drawing of Graffiti, as shown on fig. 46. (2.)

keel.¹ It is believed to have belonged to an earlier period than the Viking age.²

The representation of boats was, from an early period, a common practice in Scandinavia, and so no particular significance need be attributed to this tablet beyond its interest as an illustration of such a ship as may have been in use in Shetland in the ninth century. In the view of Professor Schetelig it probably represents a war vessel.

One other tablet (figs. 48 and 49, No. 6) presents an unambiguous reproduction of two objects of everyday use of the time—a bow and arrow. This representation may be seen on the slate toward the upper left-hand corner. It will be noticed that the arrow is placed in reverse position with the point across the string and the head projecting beyond the bow. The significance attaching to this arrangement is not apparent. Equally cryptic are the two circular figures scratched behind the bow and arrow. Bows and arrows were in regular use by the Norsemen. There are few references to them in the Sagas, and it is inferred that their use was largely confined to the rich man's hunting.³ This example was found at floor-level in the southern section of the dwelling.

Less certain of interpretation is the design scratched on a small pentagonal fragment, figs. 49 and 50, No. 5. This bears a resemblance to another boat with a dragon-headed prow, and, more problematically, a representation of the tent, or awning (*tjald*), erected in the centre of the ship when at rest. Towards the bow in the drawing there appears to be a mast, while in the centre is seemingly another mast carrying a sail as if a second drawing had been imposed on an earlier one. The boat, if such it be, is represented as floating in the water.

This piece was also found in the southern section.

The curved lines drawn on figs. 48 and 49, No. 2, viewed as placed on the plate, or sideways from the left, may also be intended to represent the bows of ships, but the intention of the draughtsman is less clear than even the previously described specimen. This slate was found at floor-level near the centre of the dwelling.

Another example represented by two detached fragments made up of several broken pieces (figs. 49 and 50, No. 3) is evidently intended to represent some definite object, or design.⁴ In the larger portion it will be observed that the representation is in duplicate. In general character the graffito bears some resemblance to a pine tree, on one side.

¹ Schetelig, *op. cit.*, p. 96.

² *Ibid.*

³ T. D. Kendrick, *A History of the Vikings*, p. 35.

⁴ The detached portion in making the figs. has got slightly moved out of position to the right. The right edge of the lower portion should be in alignment with the stem in the upper.



Fig. 48. Tablets of Slate with Graffiti Markings. (1.)

with branches radiating from a central stem and diminishing in length upwards. On the opposite side of the stem, however, the branches give place

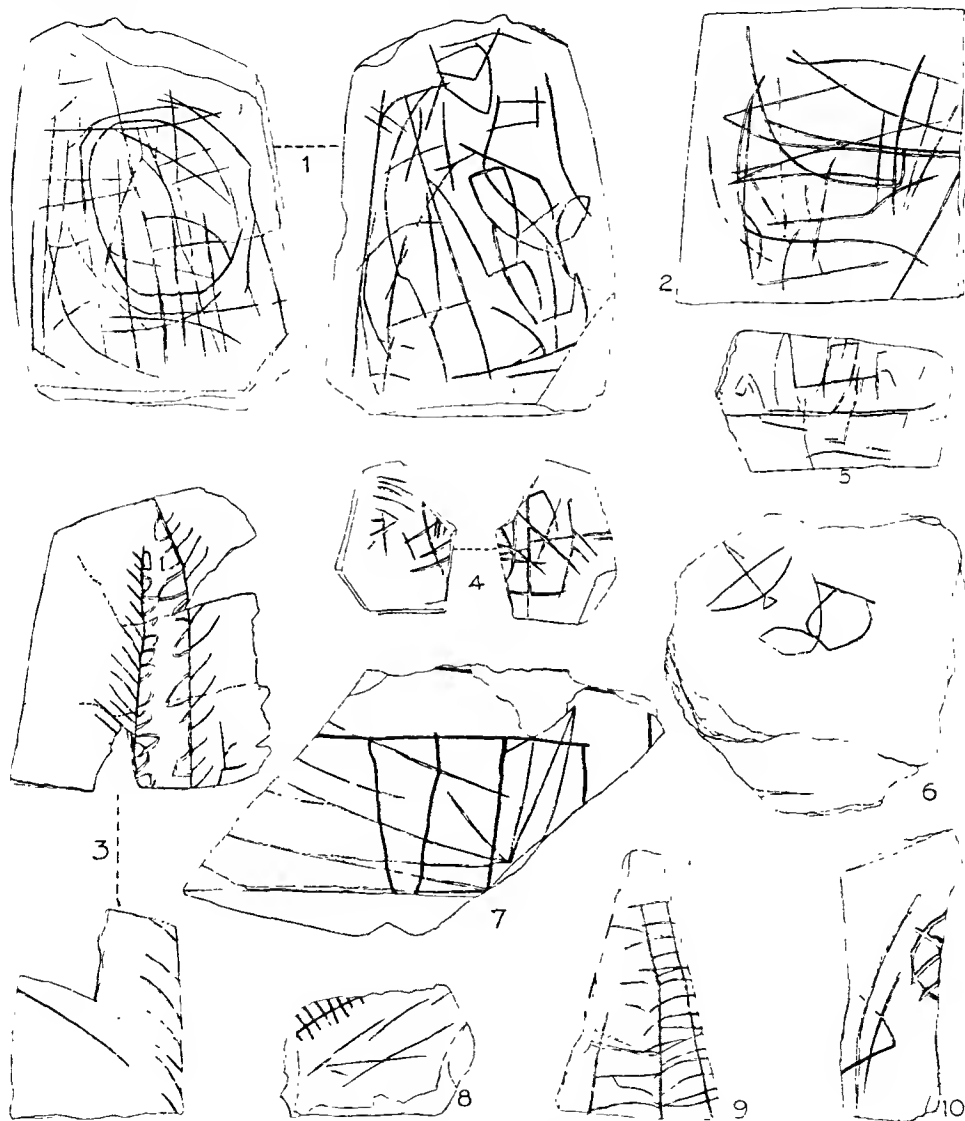


Fig. 49. Drawings of Tablets with Graffiti Markings.

to a series of loops, also diminishing in length towards the upper end of the stem. It has been suggested that the slender lines represent the branches of a spruce tree in summer, and the loops the branches covered with snow

in winter. There are, of course, no pines of any sort, and practically no trees in Shetland, but the pine is the common timber of Norway.

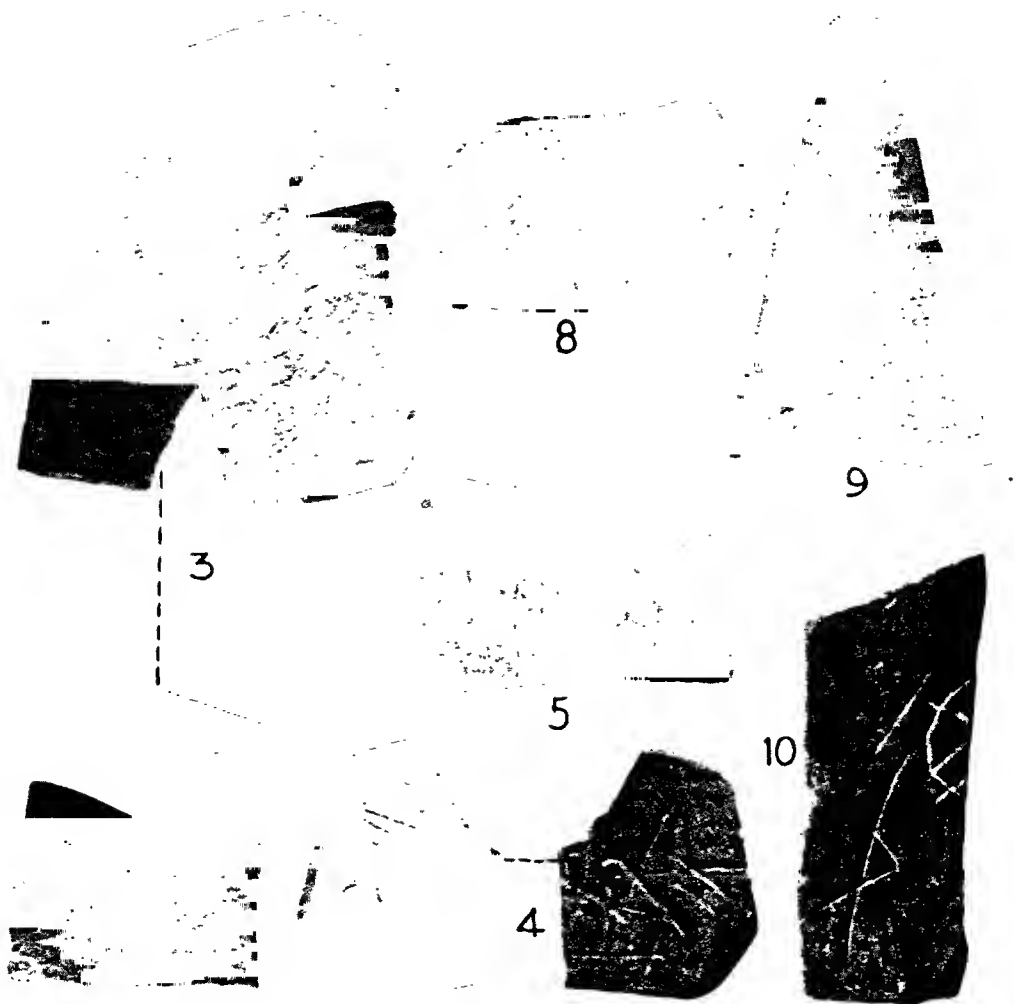


Fig. 50. Tablets of Slate and Stone with Graffiti Markings. ($\frac{1}{4}$.)

These fragments were found at floor-level on the top of the *pallr*, just to the north of the cross wall.

Figs. 49 and 50. No. 9, show an example with scratchings along one

edge, suggesting some form of runic writing. This slate was also found on floor-level in the south section. The pieces illustrated by Nos. 4 and 10 in figs. 49 and 50 show a different technique than the others, the lines being



Fig. 51. Tablets with Graffiti Markings.

cut much deeper. Both were found at the north-west corner, and so probably belonged to a later period.

On a number of the tablets were drawn schemes of intersecting lines, more or less at right angles, as if some attempt had been made to form a squared basis for the execution of curvilinear design. Figs. 48 and 49, No. 7, and figs. 51 and 52, Nos. 1 and 2, both sides of which are shown, illustrated this treatment.

No. 3 of figs. 51 and 52, of which both surfaces are also shown, has a curious striated treatment on one surface, suggesting an attempt to represent the sea. Unfortunately the fragment which might have furnished an explanation of this graffito is amissing. On the reverse is a rectilinear scheme.

Figs. 53 and 54 illustrate a slate on which the scratchings in curvilinear design appear to suggest an attempt to produce a recurving spiral

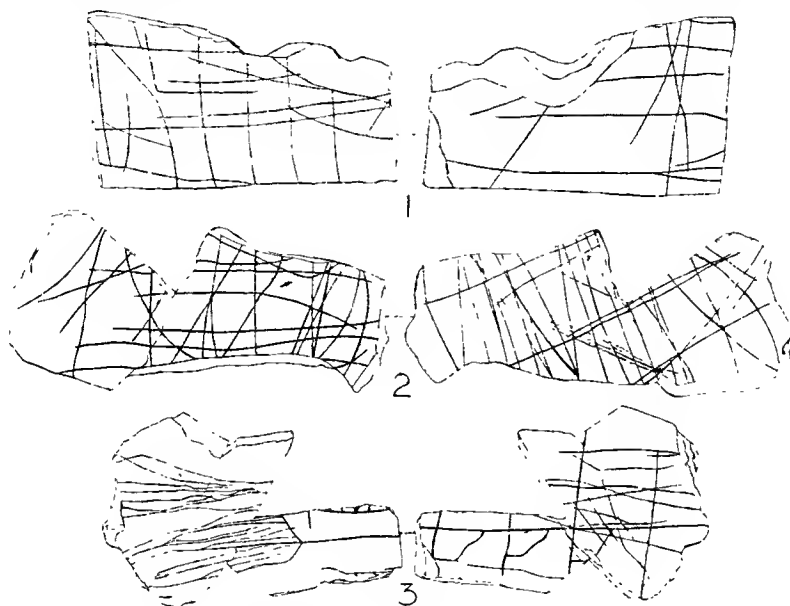


Fig. 52. Drawing of Tablets with Graffiti Markings. (1.)

after the manner of Celtic design. If such was the intention the result has not been very successful.

Figs. 48 and 49. No. 1. show the two sides of a tablet with lines producing both rectangular and curvilinear forms, but not clear in their implications.

While by far the greater number of marked tablets were found on the floor-level of what must have been the earlier occupations, several were recovered from the wall-heads towards the north end when these were being cleared. That does not, however, preclude their belonging to an early period, as the inner part of the wall-head would not necessarily be covered in as in a modern house.

There does not appear to be any analogy to this find of scored stone tablets in connection with any building of the Viking period in Norway.

When, however, the remains of the monastery of St Mochaoi of Nendrum, in County Down, in Northern Ireland, were excavated¹

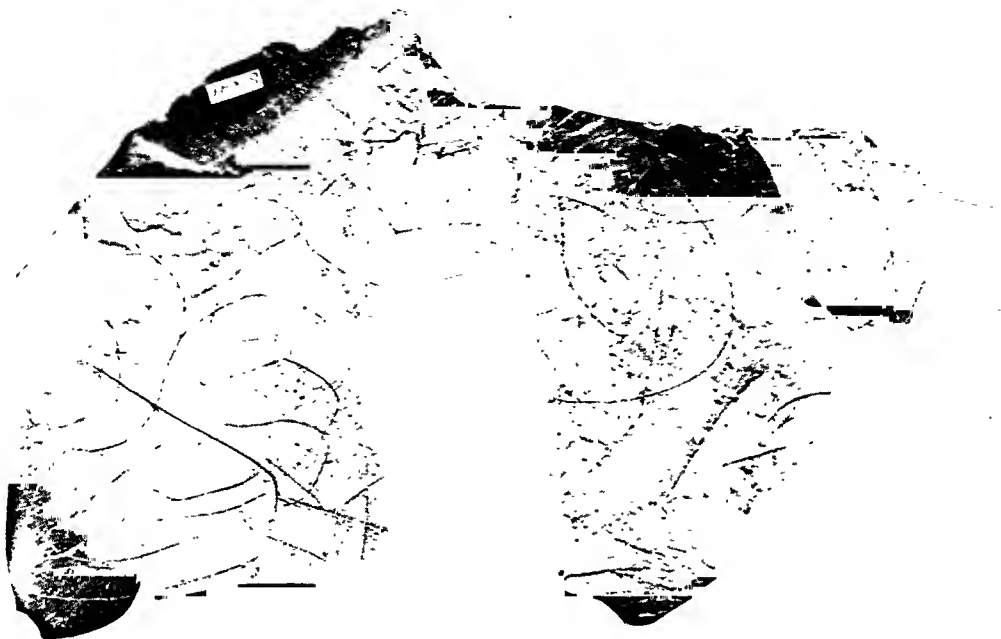


Fig. 53. Tablet with Curvilinear Graffiti.

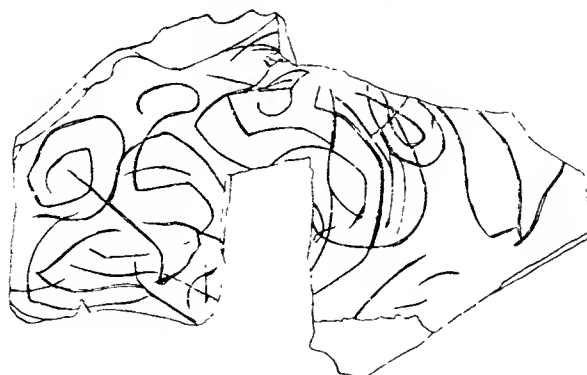


Fig. 54. Drawing of Tablet with Curvilinear Graffiti. (1.)

there were found on the site of a rectangular building, believed to be that of a school, some thirty tablets of slate, or stone, bearing inscribed designs. The drawings on the Nendrum tablets are, however, more

¹ H. C. Lawlor, *The Monastery of Saint Mochaoi of Nendrum*, Belfast, 1925.

sophisticated, and their purport, whether that was the production of design of interlacing of animal forms, or letters, is as a rule unambiguous. As the destruction of the school and adjacent huts by the Norsemen is believed to have taken place about the year A.D. 947, they give an indication of the character of Celtic art in Ireland probably a century later than the rude attempts at drawing found at Jarlishof.

It is not possible to arrive at any definite conclusion as to the meaning and purpose of the Jarlishof scribings. The representation of the ship, reduced to essentials, and drawn with a sensitive line, is the work of a draughtsman. Many of the other tablets show the most rudimentary attempts at drawing, and might well be the efforts of pupils studying the elements of design. Failing that, they are the meaningless scribbles of an idler produced with the point of his knife on a smooth surface. The fact that their distribution was not confined to one part of the site makes it probable that additional pieces may be found, and these may throw some further light on the meaning of the scratchings.

Steatite, Vessels of, etc.—Numerous fragments of vessels of steatite were found in the dwelling. Several contiguous pieces of a large pot, four-sided and tapering to the base, were recovered from the north end. Such straight-sided vessels are characteristic of the Middle Ages.¹ These fragments found in the north section of the house probably belonged to the latest occupation.

The handle, $4\frac{1}{2}$ inches in length, of a skillet, or ladle-like vessel, was found in the south section, and as such vessels date from Viking times this probably belonged to one of the earlier occupations.²

Fig. 55 illustrates a portion of a plate of steatite rudely scored on both surfaces. A piece showing marks of fire was found in the vicinity of the oven, and several pieces were recovered from a trial trench in 1933. They are probably portions of flat dishes used in baking or frying.

Toggle of Bone.—The object illustrated in fig. 27, No. 2, with a perforation in the centre, appears to be a dress-fastener or toggle. It was found at floor-level in front of the small hearth in the central section. A similar object was found in a woman's grave of the Viking period at Caru Nan Bharrich, Isle of Oransay, associated with a pair of iron shears, a bronze pin with a movable ring-head, and a pair of single scaled oval brooches of bronze. These relics are preserved in the National Museum of Antiquities.³

Whorls.—Nine whorls were found in the course of the excavation

¹ Sigurd Grieg, *Middlealderske Byfund Fra Bergen og Oslo*, Oslo, 1933, p. 204.

² Sigurd Grieg, *op. cit.*

³ *Proceedings*, vol. xlviii, 1913-14, p. 292.

of the dwelling, shown in fig. 56. Of these seven were of stone, one of lead, and one of cetacean bone. The lead whorl, No. 4, was sub-conical, the others were either flat or plano-convex in section. All came from the floor-level in the centre or southern sections, except the lead specimen, which came from about 4 inches above floor-level.

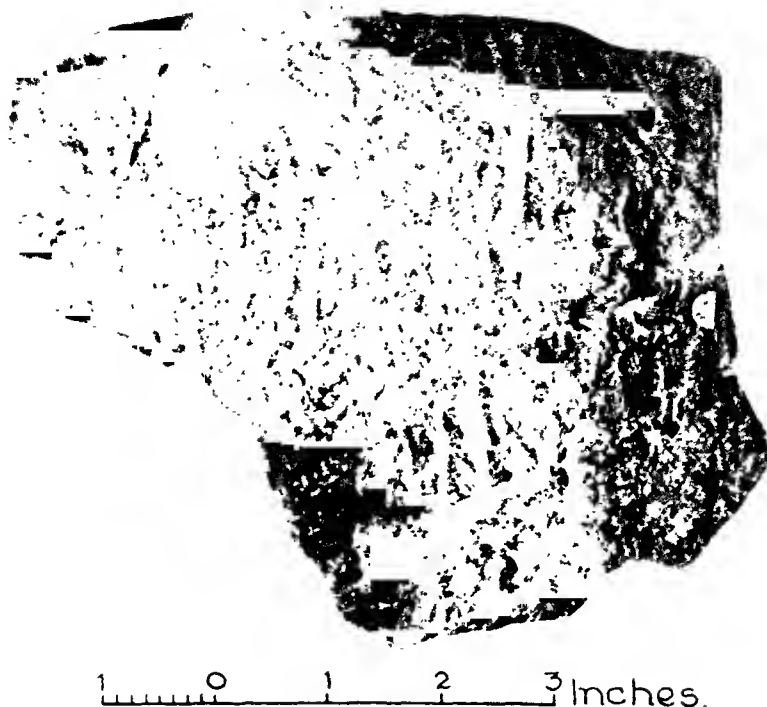


Fig. 55. Portion of a Plate of Steatite.

Among the objects which came from a high level, and therefore presumably of late date, was a model of the upper stone of a Shetland horizontal water mill (fig. 57). In the underside, shown on the right of the illustration, is the check cut to receive the sile—the small iron bar fixed across the opening. The object, made of stone, measures $2\frac{3}{4}$ inches across, and was found above the midden at the north end at 1 foot 6 inches below the surface.¹

The comb shown in fig. 31, No. 5, with a straight bow and teeth in one side only, was found on the floor-level of a late building overlying

¹ For a description of these primitive mills see *Proceedings*, vol. xx, p. 257.

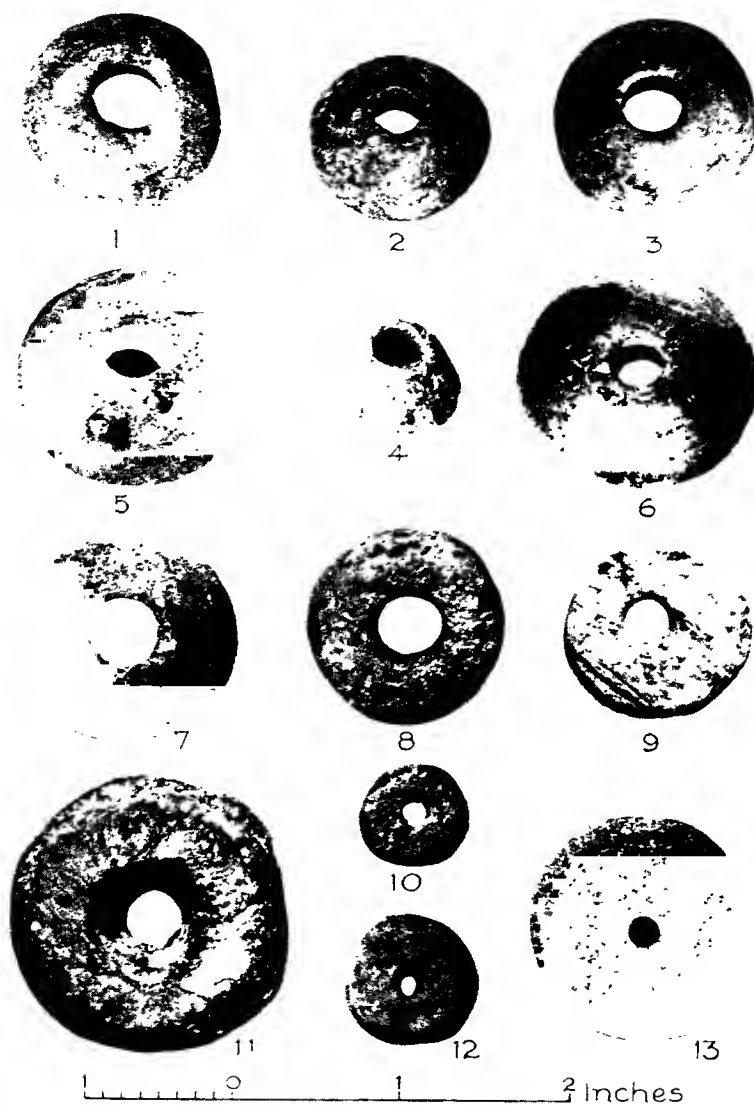


Fig. 56. Whorls and Beads.

the midden to the north of the dwelling. It probably dates from late mediæval times.

Several pieces of glazed mediæval pottery were recovered—one small piece of a base, thin ware, covered with a brownish mottled glaze, was found at floor-level in the south section. It can, however, hardly be associated in date with the other relics from the interior of the house.

Fig. 29. No. 7, shows a portion of a book-clasp on which appears the letter H. It was found near the surface and is probably of comparatively late date.

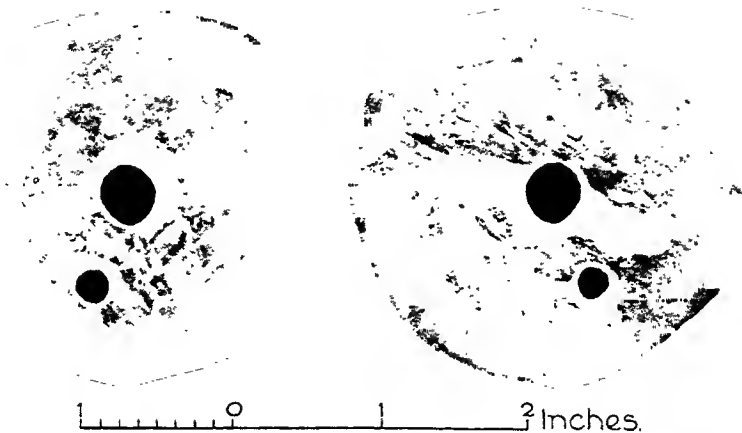


Fig. 57. Model of upper Stone of a Shetland Mill.

The two knife-blades, imperfect, in fig. 19, Nos. 1 and 2, were practically surface finds, also the iron rings in the same fig.

The general inference to be drawn from these relics is that the dwelling was in occupation during the tenth century. Those from the middens, as shown by finds elsewhere, likewise point to occupations during the Viking period. It has been suggested that the midden in the alley-way, as it partially blocked the entrance to the house, must have belonged to the third period: but, though such an inference may be drawn from its position, the character of the structure of the latest dwelling, so far as it is recognisable, suggests a later date than is indicated by the relics found in that midden. It may be that this midden actually belonged to the second house, and that the third building was not occupied as a dwelling, and its existence one of brief duration.

RELIC FROM THE BROCH OF JARLSHOF.

The opportunity is taken of illustrating in this communication an oblong tablet of stone, marked in graffito, which was discovered some three years ago in a recess about four feet above ground-level, in the outer face of the massive wall which encircles the neighbouring broch of Jarlshof. The markings have been made on a soft stone with a sharp-pointed implement, and, except that at either end there is

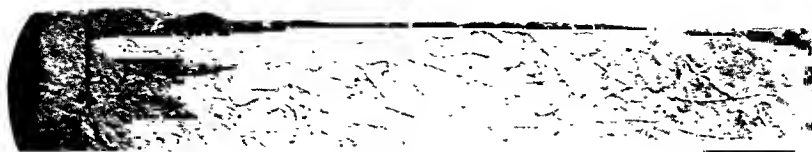


Fig. 58. Stone with Scribings found in Broch. (†.)

an example of the double intersecting triangle known as Solomon's Seal, they seem to produce no intelligible design. Conceivably they belong to approximately the same period as those on the slates from the Viking dwelling, for it is quite possible that the recess in which the object was found was still exposed in Viking times.

I cannot close this paper without expressing my thanks to the many friends who have given me assistance in its production, and to those who helped me in the field. To friends in Norway who, on a visit of inquiry, aided me from their stores of knowledge, and afforded me every facility to study the collections under their respective charges, Professor Schetelig and Dr Boe in Bergen, Dr Pedersen in Stavanger, and last, but not least, Professor Anton Brögger and Dr Sigurd Grieg, I owe especial thanks. To Miss Cecil Mowbray, F.S.A.Scot., who not only helped in the field, but made the remarkably accurate drawings of the graffiti, I am deeply indebted. I must also thank Capt. E. M. M. Alexander, who likewise assisted at Jarlshof, and laboured hard to reconstruct whole vessels from innumerable broken pieces of steatite pots. Dr Graham Callander and Mr Edwards, of the National Museum of Antiquities, have both rendered me much service, for which I am indebted; while, as in previous years, Miss Margery Platt, M.Sc., of the Royal Scottish Museum, has taken infinite pains to determine the nature of the bones, and Mr M. J. Orr, of the Royal Botanic Garden, has been correspondingly helpful with vegetable remains; and, as previously, I desire to record my appreciation of the work of the staff, members of the Office of Works, and local labourers who assisted at Jarlshof.

A CHAMBERED CAIRN AT SOUTH CLETTRAVEL, NORTH UIST.
By W. LINDSAY SCOTT, D.S.C., B.A., F.S.A.Scot.

(To be printed at the end of the volume.)

MONDAY, 11th March 1935.

THE HON. LORD ST VIGEANS, Vice-President,
in the Chair.

A Ballot having been taken, the following were elected Fellows:—

JOHN CRAIG, M.B., Ch.B., M.R.C.P.E., 5 Albyn Terrace, Aberdeen.
JOHN GENTLES, Architect, 1 Wilson Street, Cliftonville, Coatbridge.
WILLIAM LYLE, Braigh na Bruaich, 57 Lanfine Road, Paisley.
Captain JOHN MACFARLANE, "Selma," 34 Derby Street, Watson's
Bay, Sydney, Australia.
J. HARRISON MAXWELL, M.A., 21 Tay Crescent, Riddrie, Glasgow.
WILLIAM HARRIS VALENTINE, The Mansion House, Auchterhouse,
by Dundee.

The following Donations to the Museum were intimated and thanks
voted to the Donors:—

(1) By Sir JOHN S. HORSBRUGH-PORTER, Bart., Keytes, Bourton-
on-Hill, Moreton-in-Marsh.

Cinerary Urn found on Horsbrugh Castle Farm, Innerleithen, Peebles-
shire, and bronze fragments found amongst the cremated human bones
therein (see previous Communication by A. J. H. Edwards, F.S.A.Scot.).

(2) By CARL HENDERSON, North Berwick.

Oyster Shell with a rectangular piece, measuring 1 inch by $\frac{3}{4}$ inch,
cut out for making jewellery, found on the shore at Tantallon Castle,
North Berwick.

(3) By WILLIAM SCOTT, F.S.A.Scot.

Medal of Bronze, in commemoration of the Battle of Toulouse, 10th
April 1804 (*sic*).

Medal of White Metal, bearing the bust of Dr Thomas Chalmers

on the *Obv.*, and IN COMMEMORATION OF THE FIRST ASSEMBLY OF THE FREE PRESBYTERIAN CHURCH OF SCOTLAND, 18TH MAY 1843 round the edge.

- (4) By Sir JAMES H. STEWART-LOCKHART, K.C.M.G., 6 Cresswell Gardens, South Kensington, London.

Stewart of Ardsheal Family Relics, consisting of:—

The Charm-stone of the Stewarts of Ardsheal.

A Snuff-box made of a shell, with a silver lid, bearing the inscription THE GIFT OF LADY APPIN TO HER DAUGHTER MRS STEWART INVERNAHYLE.

A Gold Finger-ring, of vesica shape, containing hair of Prince Charles Edward, and dislodged seed pearls which originally formed the monogram C R.

Commission by the Old Chevalier appointing Charles Stewart of Ardsheal a Colonel in his Army.

Holograph letter to Charles Stewart from James Edgar, Secretary to the Old Chevalier.

The following purchases for the Museum were intimated:—

Nineteen Implements of Flint and Chert, consisting of one Truncated Implement with a battered back of Tardenoisian type, measuring $\frac{3}{4}$ inch by $\frac{9}{32}$ inch: eleven Scrapers, measuring from $\frac{31}{32}$ inch by $\frac{13}{32}$ inch to $\frac{19}{32}$ inch by $\frac{7}{16}$ inch: and seven slightly worked flakes—all found in a small field at Newhouse, Hullion, Rousay, Orkney.

Two Batons of the Perth High Constables, of painted wood, one bearing the royal monogram V.R., and the other E.R., with a crown above, both measuring $4\frac{5}{8}$ inches long.

The following Donations to the Library were intimated, and thanks voted to the Donors:—

- (1) By JAMES CURLE, LL.D.

Autograph Letter, signed, of Henry, Cardinal York, dated July 1802.

Autograph Letter, signed, of Louise de Stolberg, Countess of Albany, dated 13th August 1809.

- (2) By L. M. ANGUS-BUTTERWORTH, F.S.A. SCOT., the Author.

The Monumental Brasses of Cheshire. From *Cheshire Life*, vol. i. No. 8, p. 194. December 1934.

(3) By THE SCOTTISH ANTHROPOLOGICAL SOCIETY.

The Proceedings of the Scottish Anthropological Society, vol. i. No. 1. October 1934.

(4) By Professor J. DE LANCEY FERGUSON. M.A., Ph.D.,
F.S.A.Scot., the Author.

Burns's Journal of his Border Tour. Reprinted from Publications of the Modern Language Association of America. Vol. xlix. No. 4. December 1934.

(5) By Dr W. A. VON JENNY. Museen für Vor und Frühgeschichte
Berlin. S.W. 11. Prinz Albrechtstr. 7.

Berliner Museen Berichte aus den Preussischen Kunstsammlungen
Beiblatt zum Jahrbuch der Preussischen Kunstsammlungen erscheint in
4-6 heften Jährlich. LVI. Jahrgang. Heft 1. 1935.

(6) By EDWARD SMALL MOORE and PAUL MOORE. 48 Wall Street,
New York.

William Henry Moore and his Ancestry, with Accounts of the Moore
Families in the American Colonies, 1620-1730. By Effingham de Forest,
M.A., J.D., F.I.A.G., F.S.G., and Anne Lawrence de Forest.

(7) By Professor V. GORDON CHILDE, B.Litt., F.S.A.Scot., the
Author.

The Prehistory of Scotland.

(8) By Sir GEORGE MACDONALD. K.C.B., LL.D., D.Litt., F.B.A.,
H.R.S.A., *President*.

Germanenfunde aus Böhmen im Naturhistorischen Museum zu Wien.
By Leonore Nischer-Falkenhof. Wien. Reprint from *Sudeta*, X. 1934.

(9) By Rev. S. GORDON WILSON. The Master's Lodge, Eastbridge
Hospital. Canterbury. the Author.

With the Pilgrims to Canterbury and the History of the Hospital
of Saint Thomas. Canterbury. 1934.

The following purchases for the Library were intimated.

Magical Jewels of the Middle Ages and the Renaissance, particularly
in England. By Joan Evans, B.Litt. Oxford. 1922.

Scottish Folk-lore and Folk Life. Studies in Race, Culture and
Tradition. By Donald A. Mackenzie. London and Glasgow. 1935.

The following Communications were read:—

I.

A LONG, STALLED CAIRN, THE KNOWE OF YARSO, IN ROUSAY, ORKNEY. BY J. GRAHAM CALLANDER, LL.D., F.S.A. SCOT., DIRECTOR OF THE NATIONAL MUSEUM OF ANTIQUITIES, AND WALTER G. GRANT, F.S.A. SCOT.

In many parts of the island of Rousay the land rises from the shore in a series of shelves or flat, narrow plateaux, exposing, in places, a face of much weathered flagstone rock of the Old Red Sandstone formation. On the south-western slopes of Blotchnie Field, the highest hill in Rousay, 821 feet high, which lies in the south part of the island overlooking Eynhallow Sound, these shelves are prominent features in the landscape, as will be seen in fig. 2. In the area known as Frotoft, about 500 yards slightly east of north of the standing stone on the roadside at Langstane, and about 480 yards west-north-west of the farm of Mid Crusday, at an elevation of 300 feet above sea-level, was a mound of stones overgrown with heather and grass, known as the Knowe of Yarsø, and marked on the O.S. Map as a broch. However, it was a cairn erected close to the outer margin of a shelf, which is about 50 yards wide at the spot, and is bordered by a rocky escarpment about 30 feet high. As the edge of the rock is jagged, in parts there was only room to pass between it and the cairn, and at no place was the side of the structure more than 12 feet distant from the brink. To the south the monument commands a magnificent view of the island of Mainland and of many others, from the mouth of Eynhallow Sound on the west to the island of Stronsay on the east. Before excavation it was quite evident that this was a stalled, chambered cairn of the same class as the neolithic cairn at Midhowe, lying about 3 miles to the north-west, described last year in the *Proceedings*, vol. lxviii, p. 320, because the tops of three pairs of erect slabs set in alignment across the structure, dividing the chamber into three compartments, projected above the debris with which the interior was encumbered. However, it differed from the Midhowe cairn inasmuch as it was shorter and had been destroyed in a different fashion. At Midhowe the roof had collapsed before the structure was despoiled in later times, and even then the stones which had fallen into the chamber had not been removed. At Yarsø the superstructure of the monument had been carried away for building

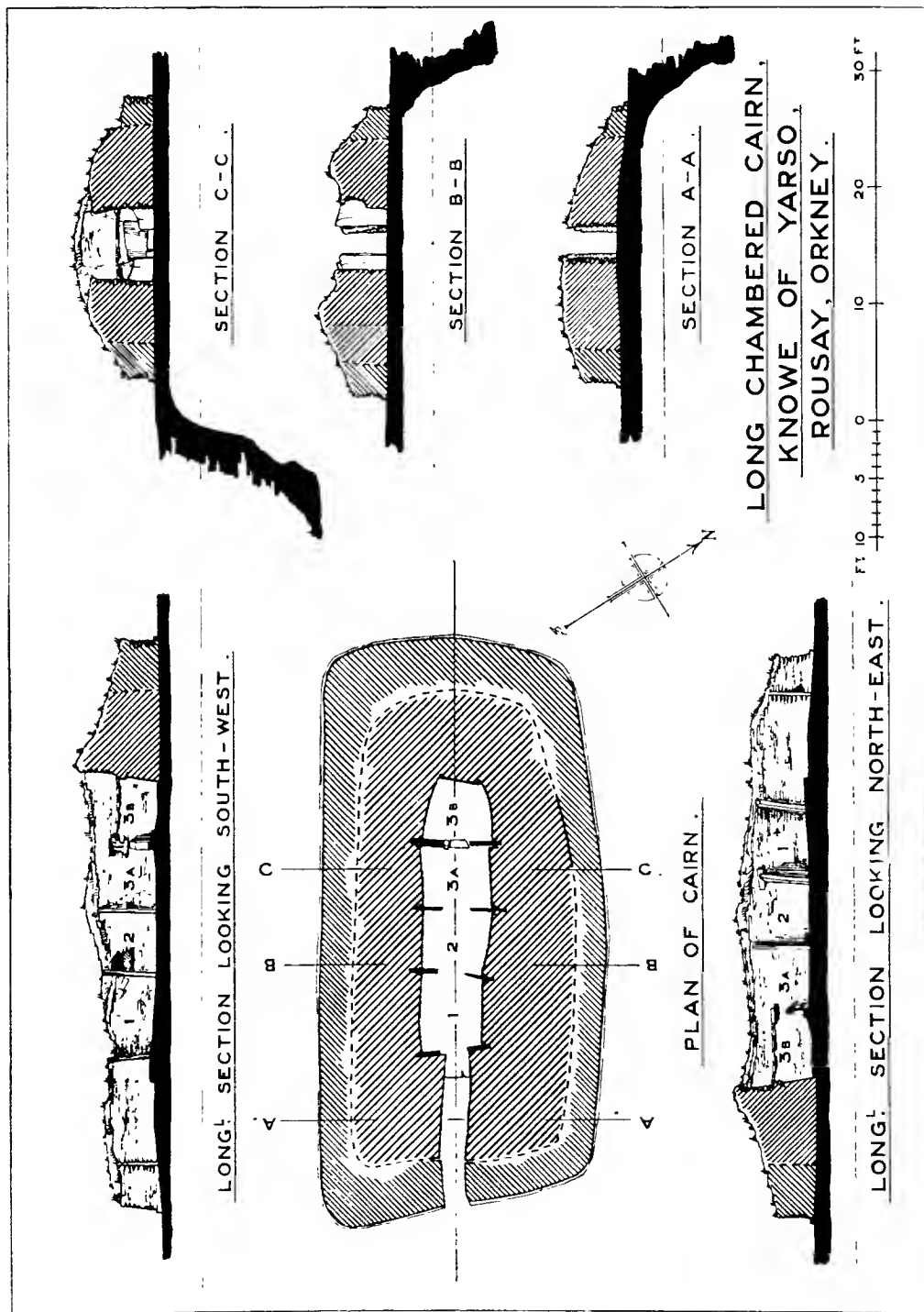


Fig. 1. Chambered Cairn, Knowe of Yarso: Plan and Sections.

purposes, and all the large stones which had fallen into the central cavity had been dragged out, with the result that there was more soil amongst the debris than at Midhowe, and the relic bed on the floor with its contents was much disturbed.

The mound, which was rectangular with rounded ends, measured



Fig. 2. Knowe of Yarso from south-east.

62 feet in length, 32 feet in breadth, 6 feet in height at the north-west end, and 4 feet at the south-east, but the cairn proper within the accumulation of soil and debris is 50 feet long and 25 feet 6 inches in greatest breadth. The main axis lies 45° west of north magnetic, approximately north-west by west and south-east by east. The sides are nearly straight, the four corners and the north-west end rounded, and the south-east end, where the entrance is placed, straight.

This cairn bears a striking resemblance to the Midhowe mausoleum both in its internal and external structural features. The chamber in each monument is divided into stall-like compartments by flagstones

set on end opposite each other on both sides, only, while there are twelve compartments or cells at Midhowe, there are but three at Yarso (fig. 1). In both the inner cell is subdivided, and there are indications that there had been an upper storey at the farther end. It will be remembered that at Midhowe there is a face of walling within the mound, and that the outer wall is built with the stones not placed on the flat, but with their outer edges lying obliquely: the same features with certain modifications are to be seen at Yarso.

The foundation course of the outer wall consists of fair-sized flagstones laid flat, and projecting outwards about 3 inches from the face of the wall so as to form a plinth. At the south-east end of the cairn the stones forming the outer face of the wall on the west side of the entrance slope downwards from right to left (fig. 2): on the east they slant down from left to right, and this formation continues right round the monument until the south-west corner is reached (figs. 2, 3, and 4). The outer face of the wall still maintains a height of 2 feet 9 inches and 3 feet 3 inches on the west and east sides of the entrance, 2 feet 4 inches at the south-east corner, from 3 feet to 3 feet 2 inches along the east side, 1 foot 11 inches at the north-east corner, 2 feet 7 inches at the north-west end, and from 2 feet 6 inches to less than 1 foot along the west side. In places, owing to the face of the wall slipping forward, the plinth is barely visible. It is not known whether the upper part of the outer face may not have been built with the stones laid with a reverse slant and a flat string-course below, as in the Midhowe cairn (fig. 5), but in the latter the top of the string-course is only 2 feet 6 inches above the foundation, while at Yarso the face rises over 3 feet in height without any indication of a change in the style of building, and thus it is quite likely that the upper part of the wall was constructed with the stones slanting in the same direction as the lower.

Near the northern end of the east side a break in the surface of the building has exposed a length of about 8 feet of the face of an inner wall built in the ordinary way, 2 feet 4 inches in from the outer face (figs. 3, 2, and 4, 2). This portion of the inner wall stands 2 feet 2 inches above the remaining part of the outer one, which is about 3 feet high here, thus indicating a surviving height of about 5 feet for the former. The inner wall was not traced farther except at the north-west corner, but it seems practically certain that it extends right round the cairn as its ends are clearly seen on both sides of the entrance passage 3 feet 10 inches from its outer end.

The burial chamber and its entrance passage (figs. 2 and 6) are placed almost in the centre of the cairn, the passage measuring along its medial



Fig. 3. Knowe of Yarso from the east, showing outer wall (1) and inner wall (2).



Fig. 4. Knowe of Yarso from north-west, showing outer wall (1) and inner wall (2).

line 13 feet 2 inches in length and the chamber 24 feet 1 inch. The width of the cells varies from 5 feet 5 inches to 6 feet, and the average distance between the inner ends of the divisional slabs is 2 feet 7 inches. Both the entrance and the chamber have been rudely paved with flat stones.



Fig. 5. Midhowe Chambered Cairn, showing face of Outer Wall with String Course and slant of stones reversed (1) and (2).

The Entrance Passage.—This measures 13 feet 3 inches in length on the west side and 13 feet 1 inch on the east, and its walls still average about 3 feet in height—at the middle of their length they are 6 inches higher. The width is 1 foot 11 inches at the outside, 2 feet 4 inches about half-way along, and 2 feet at the inner end. As no lintels survive the height of the entry is unobtainable, but it must have been no less than 3 feet at any part, and so it would not be necessary to crawl in on the hands and knees as in some of the Caithness cairns where the portal is only 2 feet and 2 feet 6 inches high. It may be mentioned that in the cairn of Maeshowe the entrance at the outside is 4 feet 4 inches in height. There is a sill or step, rising 4 inches in height, 11 feet from the outer end of the passage at Yarso, and the floor of the chamber is continued about this level to the inner end.

The Chamber.—As already stated, the gallery is divided into three compartments or cells by pairs of upright flags built into and projecting from the wall on either side, almost opposite each other (fig. 6). These slabs vary from 2½ inches to 5 inches in thickness. The first pair, which are placed immediately at the inner end of the passage with their inner

edges in line with its walls, project 1 foot 10 inches from the wall on the west side of the gallery, and 1 foot 2 inches from that on the east side. They measure 4 feet 1 inch and 4 feet 6 inches in height, their tops being highest in the middle, one being curved and the other ending in an obtuse angle. The next pair, which are set up 7 feet and 6 feet



Fig. 6. Knowe of Yarsø: Cells.

1 inch farther in, project 1 foot 4 inches and 1 foot 6 inches, and measure 4 feet 9 inches and 4 feet 3 inches in height: their tops are bevelled downwards from the edge nearest the centre of the chamber to the wall. The third pair stand 5 feet 2 inches and 5 feet 9 inches from the last two, and project 1 foot 5 inches and 1 foot 8 inches. They are 5 feet 2 inches and 4 feet 11 inches in height, and the tops are roughly level. The distance between them and the inner end of the gallery is about 10 feet 10 inches. The lower part of the wall at the inner end is formed by a slab set on edge, measuring 3 feet 1 inch in breadth at

the bottom, 2 feet 8 inches at the top, and 3 feet 1 inch in height, and the upper part by building about 3 feet 5 inches high, which curves into the side walls (fig. 6). This gives a total height of 6 feet 6 inches for the inner end of the chamber as it now stands. The end slab has been inserted after the side walls had been built as they extend beyond it. The same thing is to be seen in the cairns at Midhowe and Unstan. Along the centre the cells Nos. 1, 2, and 3 measure about 6 feet 6 inches, 5 feet 6 inches, and 10 feet 10 inches in length. Cell No. 3 is subdivided into two parts by low septal slabs and blocks of stone. Two flags project 1 foot 9 inches from the side walls, but their height is only 1 foot 10 inches as their tops have been chipped off with stone tools. The space between their inner edges is blocked by two stones 5 inches high. The inner half of this cell seems to have had an upper storey, otherwise it is difficult to explain a scarcement 3 inches wide that runs round the wall at an average height of 3 feet 9 inches above the floor, and a wall-hold projecting 7 inches from the east wall about the same level, above the low divisional slab. A break exactly opposite in the west wall suggests that there had been a corresponding wall-hold there. The width of the chamber here is 5 feet 11 inches, but there would have been no difficulty in getting a lintel to span the vacancy. At the chambered cairn Taiverso Tuick, only about a mile away, there is an upper storey, and it is believed that a similar feature existed in the Midhowe cairn.¹

In noting the distances that the divisional flagstones project from the wall the measurements stated were all taken on the south side of the stones. If measured on the north side there would have been a difference of from 1 inch to 2 inches but no more, so the side walls are not exactly aligned. This may give an indication as to the method of erecting the cairn. This suggests that, the site having been decided on, the upright divisional flagstones were placed in position before the walls between them were built up.

Relics. Save for an occasional animal bone no relics were found until the chamber had been cleared out to within 1 foot 9 inches of the floor, after which numerous fragments of human skeletal remains and a large quantity of animal bones were encountered. An exception, however, has to be made in the case of the inner cell, No. 3, where a few pieces of human bones were found about the height of the scarcement, 3 feet 9 inches above the floor. These may have been late intrusions, but we think it more likely that they had been brought up from a lower level when the stones that had fallen into the chamber

were being dragged out. Several shards of pottery, a few implements of bone, and a considerable number of tools and chips of flint were also recovered. It was very difficult to detect the last, as from the position of the cairn, on a flat rocky shelf, the seep of water from the higher ground to the north-east had made the relic bed very wet. Indeed, although all the sodden earth was carefully examined, handful by handful, a number of flints were recovered only after the wet soil had been spread out and washed by rain. So much disturbance had taken place while the stones were being dragged out when the upper part of the cairn was being removed that practically all the long bones and many of the human skulls had been smashed and displaced, human and animal bones being mixed up promiscuously. In one place where there were two broken skulls lying near each other, with animal bones between and around them, a deer tooth actually lay within the brain-pan of one. Nowhere was it possible to detect where a single body had been placed, as no limb bones occupied the relative positions of a skeleton either in a crouched or extended position.

Human and animal bones were found in the entrance passage and in each of the three cells, but more than four-fifths of the former and most of the latter came from the inner cell, No. 3. As we have seen, the latter is subdivided into two parts by low divisional stones, so to simplify description these compartments will be referred to as Nos. 3A and 3B, the last being at the inner end. Unless specifically mentioned, the human and animal remains were distributed over the floors of the different cells.

The scanty and much broken remains of one adult were found in the entrance passage, two in cell No. 1 and one in cell No. 2. When cell No. 3 was reached human bones were much more numerous. From the outer half, No. 3A, skeletal remains of seven adults and one adolescent were recovered. Skulls of five adults, three fragmentary and two rather better preserved, were found lying at the foot of the wall on the western side, and the remains of the other three individuals in the middle of the cell. But it was cell No. 3B that yielded most of the osseous remains. No less than seventeen adults were represented by skulls usually very much broken, vertebræ, fragments of eight femurs, other leg bones, and two humeri. Nine of the skulls were placed in juxtaposition along the foot of the western wall, six along the opposite side, and two about 15 inches from it. In no case was the lower jaw present. A very fine skull was found in the south-west corner of the cell, touching the divisional slab, which doubtless accounts for its good state of preservation.

Although some of the skulls arranged along the foot of the wall had suffered from disturbance, it seemed that they had been placed cranium upwards facing the centre of the chamber.

The bones of twenty-nine individuals at least, twenty-eight adults and one under twenty years of age, were identified. Owing to the broken state of the bones the sex was determined in only three cases, two male and one female; other two were doubtfully male.

An occasional fragment of highly calcined bone, probably human, but very small and in a very friable condition, was recovered.

The quantity of animal bones found was considerable, and consisted almost entirely of red-deer, many being of the size of the best animals existing in Scotland to-day. Bones from thirty-six of these animals were identified. Ox and sheep were just represented, and there were a few bones of a good-sized dog. Many limpets were found, and it may be recalled that about three gallons of them were discovered in a heap at the floor level in Midhowe cairn. Fish was represented by wrasse as at Midhowe. The bones were distributed throughout the relic bed of the chamber, but, as already mentioned, were more numerous in the inner half. They were much broken, and included teeth, ribs, and many articular ends and splinters of leg bones. The latter presumably had been deliberately split to get at the marrow. Many of the Yarso animal bones showed distinct marks of scorching and burning, as did a few from Midhowe.

Pottery was extremely scarce, and what we did find seems to have been deposited at a time later than the original burials. Near the top of the relic bed were found a basal fragment of a food-vessel (fig. 7, No. 1) and three small pieces of the wall. These were found quite close to the two skulls in cell No. 3B, inside one of which the deer tooth was lying. The food-vessel was of very dark ware, and was ornamented with vertical, deeply incised zigzag lines. There were also two wall fragments of other two vessels. One, of dark pottery, buff-coloured on the outside, and decorated with an incised zigzag, measuring less than 1 square inch, was so thin as to suggest that the vessel may have been a beaker (fig. 7, No. 2). The other, which was also dark in colour but with a reddish outer skin, measured $2\frac{1}{4}$ inches by $1\frac{15}{16}$ inch by $\frac{1}{2}$ inch. It bore two horizontal lines with short oblique ones above, all slightly incised (fig. 7, No. 3). It is quite impossible to determine accurately what kind of vessel it formed a part. The food-vessel seems to be the first recorded from Orkney, and the same may be said of the beaker if we are correct in our identification.

Implements and small flakes and splinters of flint were quite numerous

and there were a few of grey chert; a considerable number were calcined. The implements consisted of two leaf-shaped arrow-heads, measuring $\frac{15}{16}$ inch by $\frac{9}{16}$ inch and $\frac{3}{4}$ inch by $\frac{1}{2}$ inch, one barbed and stemmed with

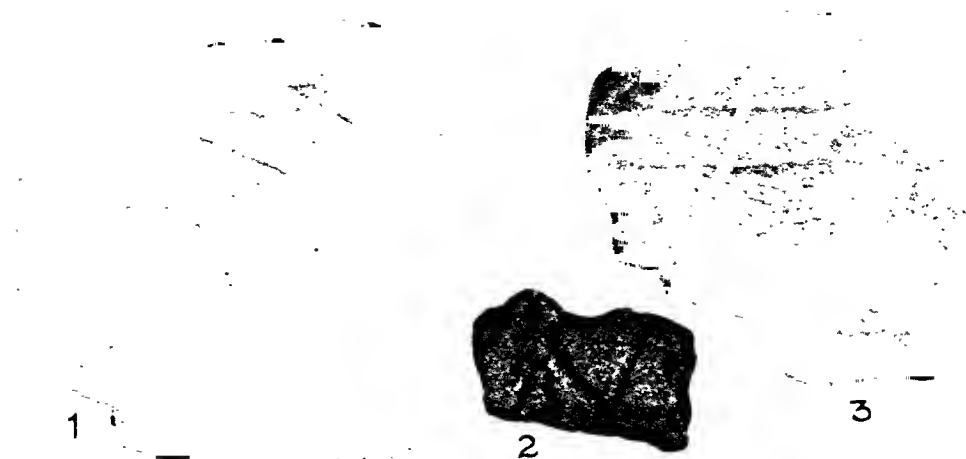


Fig. 7. Pottery Fragments, showing (1) basal part of Food-vessel. (1.)

one barb broken off, measuring $\frac{3}{4}$ inch in length, and one very crudely made specimen with the suggestion of a tang and its edges battered, measuring $\frac{13}{16}$ inch by $\frac{11}{16}$ inch (fig. 8): a knife of red colour nicely worked

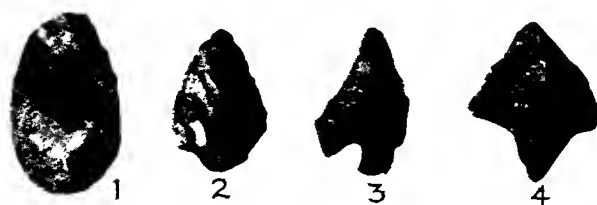


Fig. 8. Flint Arrow-heads. (1.)

along one edge, measuring $1\frac{7}{8}$ inch in length, and another of grey colour, measuring 2 inches in length (fig. 9, Nos. 16 and 17); one object which has been identified as a *burin d'angle* or graver, measuring $1\frac{1}{2}$ inch by $1\frac{1}{8}$ inch (fig. 10); forty-six scrapers; and sixteen worked flints, a total of sixty-nine objects. The barbed arrow-head, three scrapers, four knives,



Fig. 9. Flint Scrapers and other Implements. (1.)

and a worked flint came from the relic bed in cell No. 1. Two scrapers were found 2 feet above the floor of cell No. 2, and two knives and twenty scrapers in the bottom layer. At the latter level in cell No. 3A there were recovered a leaf-shaped arrow-head, a knife, and two scrapers, and in cell No. 3B three scrapers. The remaining implements were found in the sludge which covered the floor of the chamber. A selection of scrapers and other implements is shown in fig. 9. In addition the following flakes and splinters were found: twenty-three from cell No. 1, fifteen from cell No. 2, fourteen from cell No. 3A, and nineteen from cell No. 3B, all from the relic bed. So far as we know the burin is

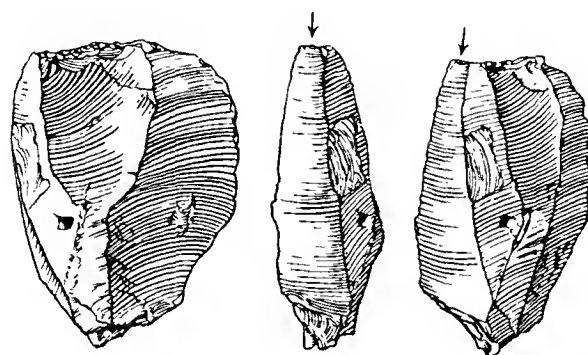


Fig. 10. Flint Graver (burin). (3.)

the first recorded from Scotland, with the exception of some Tardenosian micro-burins. Most of the scrapers are of small size and often of irregular shape. They measure from $\frac{7}{16}$ inch by $\frac{17}{32}$ inch to $1\frac{13}{16}$ inch by 1 inch in size. The flint is typical of what is found in Orkney, some being cherty and most of poor quality. The predominating colour is from light grey to dark and there are a few yellow. The collection again demonstrates how fully the meagre supply of this much sought after material was utilised in Orkney. It may be recalled that geologists consider that this flint was brought up from the bed of the North Sea, from the south-east, by ice.

One tine of the red deer, with the point sharpened, measuring $3\frac{15}{16}$ inches in length, and five pointed implements made out of splintered ox bones, were found in the lowest level in cells Nos. 2 and 3. Two other splinters with spatulate ends were also recovered, one about half-way up cell No. 2 (fig. 11, No. 5). With the exception of one of the pointed tools all were more or less decayed, the surface cracked and scaling off in places: it is difficult to say whether the spatulate objects

are really artifacts. The five undoubted implements consist of a pin, measuring 2 inches in length, two bluntly pointed instruments, measuring $3\frac{3}{4}$ inches and $3\frac{9}{16}$ inches in length (fig. 11, Nos. 1 and 2), a sharply pointed object, measuring $3\frac{1}{2}$ inches in length (fig. 11, No. 3), and one with a narrow point squared at the end measuring $3\frac{13}{16}$ inches in length (fig. 11, No. 4).



Fig. 11. Pointed Implements of Bone. (1.)

The last resembles some implements dating to Palæolithic times found in France, which are recognised by archaeologists in that country as having been used for flaking flint. On one side of the point of the Yarso example is a carefully made hollow, into which the thumb fits comfortably, and it may well have been used for pressing off small flakes of flint.

In describing the stalled cairn at Midhowe last session we expressed the opinion that to a certain extent it had been used as an ossuary

(*Proceedings*, vol. lxviii. pp. 334 and 335), because in addition to skeletal remains from bodies which had been placed in a crouching position, and perhaps in some cases in a sitting position. being found, there were deposits of bones from dismembered skeletons or parts of skeletons. In the Knowe of Yarsø by far the greater number of skulls were arranged along the base of the walls of the two sections of the inner cell, No. 3, and so far as we could see they showed no individual relationship to the other bones. Of course, the layer containing the remains, except in the parts that lay close to the walls, was much disturbed and mixed up, presumably when the cairn was plundered for building stone. Thus it would seem that this monument should be considered an ossuary rather than a burial vault. At Midhowe the whole twenty-five individuals had been placed in the eight inner cells and none in the four which had to be traversed to reach the first deposit. At Yarsø, of the twenty-nine individuals buried, twenty-five were found in the two sections of the inner cell, No. 3, seventeen in the inner half and eight in the outer. Presumably, the first burials would take place in the inner section of the inner cell, and when that was fully occupied those following would be deposited in the adjoining one. Our suggestion that the reason why no human remains were found in the four outer cells at Midhowe was that some of the bodies had been placed there until the tissues had decayed, and the bones could be removed to the inner chambers. This may quite well hold good for Yarsø, as the remains of only four persons were found in the entrance passage and cells Nos. 1 and 2.

We have seen that many of the flint implements and some of the animal bones found were calcined. There are also distinct indications of fires burning within all the cells of the chamber, and on both sides. Many of the stones in the walls are reddened and cracked by fire, and bear traces of soot, from a height of 1 foot 6 inches to 3 feet above the floor. At the same time, quite a lot of pieces of charred wood and ashes were observed in the deposits on the floor. No signs of fires were seen outside the entrance.

One of the skulls from cell No. 3B, that noted as No. 4 in Professor Low's report, shows evidence of having been in contact with fire. This would seem to show that the fires had been kindled within the chamber after some of the skulls had been deposited.

While the two cairns were extraordinarily rich in skeletal remains, twenty-five individuals at Midhowe and twenty-nine at Yarsø, the amount of pottery recovered was most disappointing. Fragments of seven Neolithic vessels, mostly of the Unstan type, were found at Midhowe, but not a single shard of this period was got at Yarsø. This is the

more surprising when we recall the great collection of pottery found in the Unstan cairn on the adjoining island of Mainland, and the considerable quantity in the Taiverso Tuick cairn in the near vicinity of Yarso. As for the flint implements recovered, the position is reversed. Midhowe produced only one, Unstan eight, and Yarso sixty-nine.

Seeing that no Neolithic pottery was found at Yarso, but fragments of a food-vessel and possibly part of a beaker were discovered, it might be argued that the cairn should be considered as belonging to the Bronze Age. But the forms of the few skulls surviving in a measurable condition indicate the earlier period. They clearly show Neolithic characteristics, and not those of the Bronze Age people. Further, Yarso has the chamber divided into stalls like the cairns at Unstan, Midhowe, and Taiverso Tuick, all of which yielded Neolithic pottery, and, like the last two, seems to have had an upper storey at the inner end. As for the presence of Bronze Age pottery, we have evidence elsewhere in Scotland of late intrusions into Neolithic cairns, as witness the beaker pottery from the cairns at Lower Dounreay; Caithness, Cletraval, North Uist; and Rudh' an Dunain, Skye; and the flat discoidal beads of shale at Yarrows, Caithness.

We should again like to express our great indebtedness to Mr James K. Yorston and his son James for the careful and intelligent way in which they assisted us to excavate the cairn, and to Professor Low and Miss Platt for their reports on the osseous remains.

Mr Grant has handed over the monument to H.M. Office of Works for preservation, and has given the skeletal remains to the Anatomical Department of Aberdeen University. He has also most kindly presented the artifacts found to our National Museum.

REPORT ON THE ANIMAL BONES. By MARGERY I. PLATT, M.Sc.,
Royal Scottish Museum, Edinburgh.

Numerous animal remains associated with Neolithic human burials were found at Yarsø during excavations there by Dr J. Graham Callander and Mr Walter G. Grant in the summer of 1934. These relics are fragmentary in the extreme, yet nevertheless are of great interest in that they provide evidence of the wild life on the island in early prehistoric times. Abundant as these remains are, there is not one bone complete. In the case of the limb bones it seems quite clear from the longitudinally split fragments that they have been broken purposely for extraction of the marrow. Under these circumstances, too, it is difficult to deduce the actual size of the animals, but some idea of this may be assumed from the relative size of the articulating processes which have been preserved. In addition, it may be recorded at the outset that the use of fire is clearly evinced throughout every part of the excavation, from the many bones which have been merely charred or further calcined. The various species are dealt with below under headings representing the level at which they were found.

Entrance Passage—relic bed on floor.

The shells of limpets (*Patella vulgata*) occurred here having both low and high cones, indicative of their being gathered from both exposed and sheltered parts of the beach. The greater part of the remains were composed of skeletal fragments of the Red Deer (*Cervus elaphus*). They represented two adults and one very young fawn. Both the flesh and marrow of these, together with the soft parts of the limpets, no doubt provided food for these early peoples.

No. 1 Chamber—relic bed on floor all over chamber.

In this section were the remains of three red deer, fully adult, as indicated by the lower jaws in which the molar teeth were well worn. There were also a few limb bones of very immature animals. The only antlers represented were two small tines. Lastly, there was the almost complete tibia of a dog, probably of similar height to our collie of the present day. One limpet shell only was present.

No. 2 or Middle Chamber—relic bed on floor all over chamber.

Bones of the red deer again predominated as in Chamber No. 1. The relics indicated the presence of two adults, as large as any maximum modern representative of this species, though not so massive as those whose remains have been recovered from prehistoric deposits in Scotland. For instance, a deer's skeleton found in the peat moss in East Lothian, now preserved in this museum, was one and a quarter times as large again as these Orkney deer. Further, a young specimen was present in whose jaw the milk molar had not been shed. One small tine occurred here too. Though of no prehistoric value, it is interesting to note that some bones had been gnawed by a small rodent, possibly the Orkney vole. A few limpet shells also were found.

No. 3 or Inner Chamber.

Top of relic bed 1 foot 6 inches to 2 feet above floor all over the chamber.—A great collection of red deer bones was present at this level, six animals being represented. Most individual bones of the skeleton were found, but only one small tine. There were the remains of two sheep, one approaching maturity, the other a very small lamb, and limpet shells also occurred.

From 1 foot to 1 foot 6 inches above floor all over the chamber.—In this section there were more bones of red deer than in any other part. Ten adults were represented, though not all of equal size. Four were as large as to-day's maximum, whilst the others were smaller in differing degrees. The well-preserved teeth indicate a difference of age in the various adults. Some were old, with molars well worn down, whilst others were not so old and have much higher crowns. One decidedly immature beast was present, having the last milk molar still present and lacking the last permanent molar. Limpet shells were in abundance from several localities. Three ribs of sheep occurring here are probably accidental. About 1 foot above the floor were found pharyngeal bones of the wrasse, *Labrus maculatus*.

Lowest level.—Bones of red deer were most numerous. Lower jaws, odd teeth, limb bones, and ribs, etc. were in a fragmentary state, four adults being represented in the west half of 3B, and two in the east half. Only one rib of a sheep was present, as also the humerus of a dog derived from an animal of similar size to that indicated by the tibia found in Chamber No. 1. Limpet shells gathered in both exposed and quiet localities were plentiful. Two wing bones of small birds

whose actual species have not been determined were also found. There were marks of gnawing on some of the bones.

Bones of three red deer and a fragment of a large antler came from the west half of 3A. Two of the tibia are judged to be of the same size as those of a maximum-sized stag of the present day, the third being rather smaller. The remains of three more deer came from the east half of this section, as also a single piece of a rib of an ox, 12 cm. in length, and the fourth metatarsal (left side) of a dog of a large size, corresponding with the other canine remains recorded above. The ox bone was the only authentic fragment of this species, and one may not lay too much significance upon the presence of this animal.

The chief interest in the facts recorded above lies in the ample remains of red deer on the island of Rousay during a Neolithic period.

Although it is generally recognised that red deer existed in the Orkneys in prehistoric times, its occurrence in Rousay (N. of Pomona) is unrecorded for such a date. Definite dating is always difficult, and placed localities of Pleistocene or post-"Pleistocene" period cited in a recent publication—Reynolds, *A Monograph on the Pleistocene Mammalia*, vol. iii, part iv, pp. 4-9 (*The Palaeontographical Society*)—are both situated on the island of Mainland, otherwise Pomona. The prehistoric range of red deer given in a map in *The Influence of Man on the Animal Life in Scotland* (Ritchie, 1920) is seen only in a restricted part of Pomona and islands to the east of this, and consequently does not include Rousay. Hence these facts extend the range of the red deer in the Orkneys generally at a time when the presence of man had not materially affected its numbers, directly or indirectly. As stated previously, the red deer no doubt was the chief source of food of these early inhabitants, together with the shellfish represented here by limpets. There is little evidence of domestic stock. Most of the sheep bones occurred in the upper layers, and jaw bones only at the top level, where bones of red deer were correspondingly sparse. Also the presence of ox is extremely doubtful, since only one fragmentary rib was found, and it may have accidentally fallen from surface soils.

Altogether three fragmentary bones of a dog occurred in differing situations, although their size indicates they may have all belonged to the same animal. In the absence of jaws or a more complete skeleton, one may regard these remains as accidental or intrusive. Further, the dimensions are not consistent with those of a dog from such an early period.

In conclusion I wish to record my thanks to Mr Grant and Dr Callander, who have kindly put the material at my disposal.

REPORT ON THE HUMAN SKELETAL REMAINS.
BY PROFESSOR ALEX. LOW, M.A., M.D., F.S.A.Scot.

Dr Callander and Mr Walter G. Grant have given an account of the position in which the human remains described in this report were found. The remains represent at least twenty-nine individuals, all adult except for one young individual perhaps about eighteen years of age. As is mostly the case in Neolithic interments the bones are poorly preserved. The broken nature and irregular position of the skeletal remains suggest that there probably had been some disturbance of the original interments. In all, only five skulls and four leg bones are approximately complete.

One cranium, except for the mandible, is complete and excellently preserved, and fortunately other four with some reconstruction are in fairly good condition and admit of measurements being recorded.

List of Skulls.

- No. 1. (Cell 3B, west side of inner compartment.) Complete cranium: male, between 30 and 40 years.
- No. 2. (Cell 3B, west side of inner compartment.) Cranium, face absent; male, about 40 years.
- No. 3. (Cell 3A, west side of outer compartment.) Cranium, face absent; female, about 45 years.
- No. 4. (Cell 3B, east side of inner compartment.) Cranium, fairly complete; male, about 25 years.
- No. 5. (Cell 3A, west side of outer compartment.) Complete cranium but abnormal: male, probably early twenties.

Skull No. 1 (figs. 12 to 15) is complete except for the mandible, and is that of a male. The teeth are in very good condition and have all been present at death, but the two upper central incisors are now missing. The teeth do not show any trace of disease and the amount of attrition of the crowns is very slight, not more than would be expected in an individual in the late twenties. On the other hand the sutures on the inner aspect of the cranium are all closed; on the outer aspect the whole of the sagittal suture, and the coronal and lambdoid sutures except at their lower parts are obliterated. The condition of the sutures would indicate an individual of at least forty years of age.

The cranium is elongated and ovoid with a relative breadth of 70·5



Fig. 12. Knowe of Yarso: Profile view of Skull No. 1.



Fig. 13. Knowe of Yarso: Vertical view of Skull No. 1.



Fig. 14. Knowe of Yarso: Face view of Skull No. 1.



Fig. 15. Knowe of Yarso: Occipital view of Skull No. 1.

per cent—*dolichocephalic*. The profile view shows a long skull of medium height with glabella and superciliary arches moderately developed: upper part of forehead rather full; occipital squama projecting well beyond the inion. The upper face is relatively long, the orbits and nasal aperture from their indices are just to be reckoned narrow; the upper jaw is *prognathous*, this is largely due to subnasal prognathism but is partly accounted for by the rather short basinasal length. The occipital view (fig. 15) shows well the pentagonal outline, parietal eminences placed high up, and the sides flattened. The cranial capacity of 1390 c.c. of mustard seed is rather under the average.

Skull No. 2 is represented by the calvaria, and is that of a male, the condition of the sutures indicating an individual about forty. While this is a larger and more massive calvaria, it has much the same characters as the previous skull; thus it is elongated and ovoid with projecting occipital squama. The cubic capacity is approximately 1500 c.c. and the length-breadth index 73.7—*dolichocephalic*.

Skull No. 3 is a calvaria with the facial skeleton missing, except for the two nasal bones. It is that of an individual probably about forty-five years of age; the sex is somewhat doubtful, but on the whole the characters are those of a rather muscular female. The upper orbital margins are thin and sharp, the glabella and superciliary arches faintly marked, and the forehead high and well arched: there is flatness of the vertex, prominence of the parietal eminences and the side walls of the skull approach the vertical. The skull is relatively somewhat wider with a cephalic index of 74.7—just in the *dolichocephalic* group.

Skull No. 4. This cranium, apart from lower jaw, is sufficiently intact to allow of a fairly complete series of measurements being obtained. The skull is that of a young individual, and sex characters, though not so marked, are those indicating a male. The basilar suture is closed, but all the other sutures of the cranium are open both ectocranially and endocranially: the teeth in the upper jaw have all been present at death, but now only five remain: these are in very good condition, the amount of attrition being slight, and further, in the same compartment and similarly stained as the skull, there was a male left hip-bone, in which the secondary epiphysis has only partly fused along the crest: there is a probability that the skull and the hip-bone belonged to the same individual, a young man about 25 years. In its cranial features this skull is very similar to the others: the glabella and superciliary arches are of medium development, upper part of forehead prominent, occipital squama projecting; face of medium height with upper jaw projecting—*prognathous*; orbits and nose narrow.

Skull No. 5 is abnormal and of remarkable shape and will be described separately.

Unfortunately, the other bones of the skeletons are very fragmentary. Several separate vertebræ show marked evidences of rheumatism. Of the many limb bones, only one right femur and three separate tibiæ are complete. The maximum length of the femur is approximately 430 mm., which gives a calculated stature of about 5 feet 4 inches. The shafts of three other femora are intact and the diameters of the upper third of the shaft in four specimens measure 28 by 36; 26 by 33; 26 by 36; 28 by 40; the proportion of the antero-posterior to the transverse diameter varying from 70 to 78·7 per cent. — a degree of *platymeria* usually present in femora of the Neolithic period. In the middle of the shaft the antero-posterior diameter was the greater in four male femora, and also in two female femora; the *linea aspera* in the four male femora was well developed.

The total length of each of the three entire male tibiæ is 330 mm., 331 mm., and 346 mm. respectively; calculating by Pearson's formula gives a stature of approximately 5 feet 3 inches, practically the same as that obtained from length of femur; the two short male tibiæ are right and left and seem to be a pair. In addition to these three entire tibiæ there are the shafts of seven others with the upper and lower ends deficient. Of the seven tibiæ two are rather slightly built and probably female, the other five are stouter bones and probably male. The tibiæ are flattened from side to side, being *platynemic*; the diameters at the level of the nutrient foramen of the eight bones apparently males, give a mean index of 66·5 and of the two female 72·2.

The limb bones on the whole are such as would have belonged to individuals of average muscular development; further, they are relatively short, and so far as can be calculated from the measurements obtainable the men were about 5 feet 4 inches in stature.

The skulls are very similar to those recovered from the Midhowe stalled cairn, and indicate a people with elongated heads, with forehead rather prominent, brow-ridges moderately developed, nose narrow and orbits not wide, and face *prognathous*.

Skull No. 5 consists of the calvaria with the facial portion fairly complete, but the lower jaw is missing. The skull presents unusual features in that it shows very marked asymmetry associated with premature closure of the sutures. The skull is probably that of a young male, but no trace of suture is to be seen on the calvaria, the synostosis being so complete that there is no indication of the separate bones. The teeth are irregular; there is no trace of the presence of the lateral incisors;



Fig. 16. Knowe of Yarso: Profile view of Skull No. 5—abnormal.



Fig. 17. Knowe of Yarso: Vertical view of Skull No. 5—abnormal.



Fig. 18. Knowe of Yarso: Face view of Skull No. 5—abnormal.

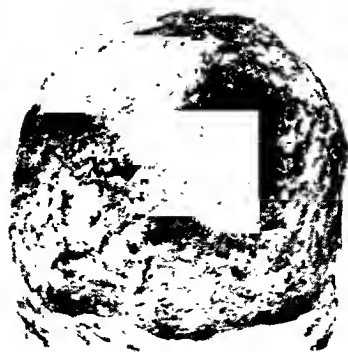


Fig. 19. Knowe of Yarso: Occipital view of Skull No. 5—abnormal.

the left canine is present and erupted, but the right while present in the jaw is unerupted; the two right bicuspid are also unerupted, while the two left are erupted; the first and second molars are well developed and present on both sides; the third molars are unerupted: the crowns



Fig. 20. Knowe of Yarso: Face views of Skulls Nos. 1, 4 and 5; and vertical views of Nos. 2 and 3.

of the erupted teeth show little attrition. The irregularity in suture closure and in eruption of teeth make it difficult to assign an age for the skull, but it might be that of a young man in the early twenties.

The dimensions and features of the skull can be learned from the illustrations (figs. 16 to 19). The asymmetry is noticeable in the vertex view, the long axis passing through the right frontal eminence which projects in front of its fellow. There is asymmetry of the base of the

skull, the transverse level of the left external ear being in advance of the right. There is also asymmetry of the face and palate. The cranium is very narrow from side to side, and viewed from above is boat-shaped, cranial index 63.3—*ultradolichocephalic*; further, there is marked heightening especially of the upper part of the frontal region in the facial view, producing the appearance of steeple-skull. A factor in the production of this abnormal skull form, has been an arrest of growth with premature closure of the cranial sutures.

In fig. 20 are shown face views of skulls Nos. 1, 4 and 5, and vertical views of skulls Nos. 2 and 3.

We are greatly indebted to Walter G. Grant, Esq., F.S.A.Scot., of Trumland, Rousay, who has presented these Neolithic skeletal remains for preservation in the Anatomy Museum, University of Aberdeen.

TABLE I.

Measurements in mm. of Skulls from a Long. Stalled Cairn, the Knowe of Yarso, Rousay, Orkney.

	No. 1. 3B., W.1	No. 2. 3B., W.2	No. 3. 3A., W.1	No. 4. 3B., E.1	No. 5. 3A., W.2 (abnormal)
Sex	Male	Male	Female	Male	Male
Cubic capacity . .	1390	1500ap.	1480	1470ap.	1425ap.
Glabello-occipital length	190	198	190	191	196
Ophryo-occipital length	186	192	187	189	193
Nasio-inion length .	175	175	172	169	178
Minimum frontal breadth	96	102	93	95	99
Maximum frontal breadth	111	122	118	123	109
Parietal breadth . .	134	146	142	141	124
Basibregmatic height	128	129ap.	129	130	135ap.
Biauricular breadth	116	124	123	115	118
Basinasal length . .	98	99ap.	99	101	110ap.
Basialveolar length	107	...	...	108	112ap.
Nasialveolar height	71	...	...	67	66
Nasimental height .	...	...	...	...	...
Bizygomatic breadth	129	...	...	...	122ap.

TABLE I—(Continued).

	No. 1. 3B., W.1	No. 2. 3B., W.2	No. 3. 3A., W.1	No. 4. 3B., E.1	No. 5. 3A., W.2 (abnormal)
	Male	Male	Female	Male	Male
Nasal height . . .	53	...	...	50	52
Nasal breadth . . .	25	...	...	23	22
Orbital height. R. . .	32	...	...	32	31
Orbital height. L. . .	32	...	...	31	32
Orbital breadth, R.. .	41	...	...	41ap.	42ap.
Orbital breadth, L. .	40	...	...	...	43
Alveolar length . . .	58	...	...	54	50
Alveolar breadth . .	65	...	...	60ap.	59
Sagittal arc. 1 . . .	115	136	126	128	135
Sagittal arc. 2 . . .	135	116	136	128	130
Sagittal arc. 3 . . .	126	135	114	134	130
	—376	—387	—376	—390	—395
Length foramen magnum . . .	40	...	36	37	...
Transverse arc . . .	294	314	310	312	280
Circumference . . .	523	553	530	538	532
<i>Indices</i>					
Length-breadth . . .	70·5	73·7	74·7	73·8	63·3
Length-height . . .	67·4	65·2	67·9	68·1	68·9
Gnathic . . .	109·2	...	...	106·9	101·8
Upper facial . . .	55·0	...	...	...	54·1
Total facial . . .	...	...	...	...	...
Nasal . . .	47·1	...	...	46·0	42·3
Orbital. R. . .	78·0	...	...	78·0	73·8
Orbital. L. . .	80·0	...	...	...	74·4
Alveolar . . .	112·0	...	...	111·1	118·0

II.

A BRONZE AGE CEMETERY AT KNAPPERS, KILBOWIE,
DUMBARTONSHIRE. BY J. M. DAVIDSON, O.B.E., F.C.I.S.,
F.S.A.Scot.

Knappers Sand Quarry is in the parish of Old Kilpatrick, Dumbartonshire, rather more than half a mile south of the Antonine Wall, at a point between the forts of Castlehill and Duntocher. Some years ago a new highway, known as the Duntocher Boulevard, was constructed between Anniesland, on the western outskirts of Glasgow, and Duntocher, and this sand-pit lies on the east side of this main artery, about a quarter mile west of its intersection with the Drumry Road.

The surrounding country is gently undulating, the elevations varying from about 100 feet above sea-level at South Drumry to about 200 feet in many of the immediately surrounding hillocks. The name "Knappers" seems to suggest the Gaelic *knapp-r* = a knob or knoll, and this drumlin through which the road was driven is typical of many in the neighbourhood. The elevation of the Boulevard at Knappers is about 150 feet above sea-level, and the knoll rises about 16 to 18 feet above this. The maximum height of the site lay along the line parallel to the Boulevard, from which it sloped gently down to the east and north-east towards Cleddans Burn, a hundred yards away.

While many of the surrounding hillocks are composed of boulder-clay, this is almost entirely absent on Knappers site, the composition being a fine regular sand with a comparative absence of shingle. The complete absence of anything like glacial boulders and the smallness of the stones composing the shingle, together with the apparent regularity of the layer upon layer of the deposition, would appear to indicate a laying down of the sand in calm-water times, the smallness of the pebbles being in inverse ratio to the turbidity of the stream flow.

Attention was first drawn to the site in December 1933, when workmen, in excavating sand, brought to light an earthenware vessel. Unfortunately it was broken into several pieces by a heavy fall of sand. This proved to be the forerunner of an important series of finds, and with the cordial co-operation of Mr Edward Millar the lessee, and the concurrence of Captain Robert Bush Black of Auchentoshan the proprietor, accompanied by my colleague Mr John Gentles, I visited

the site and was enabled to collect the information submitted in this report.

From the outset it was apparent that there was a variety of individual sites associated, though not definitely connected, one with another, and I numbered these as they came to light. The first four noted I did not see, and for the information about them and for all the subsequent assistance I received at his hands I am deeply indebted to Mr William Rogerson, the foreman on the site, who, by his enthusiasm and willing co-operation, ensured the preservation and exploration of the various deposits while not impeding the work of the quarry.

1. This was apparently a burial in a cist constructed of large stones, with a large undressed slab of micaceous schist measuring about 5 feet 9 inches long by 2 feet 9 inches wide and about 9 inches to 12 inches thick as the cover. The cist was entirely wrecked, but was said to have been formed of rounded boulders, which fell out of position owing to the removal of the sand. The long axis lay north and south. Within the structure was found a polished flint adze lying across the north end.

The adze is intact and as perfect as if it had just left the maker's hands (fig. 1). It is wonderfully worked out of a piece of black flint with large grey patches, carefully flaked and finished by grinding and polishing. The sides narrow gradually and symmetrically in a concave curve, and both the cutting face and the butt are fashioned into crescentic form. The cutting edge is very sharp. The length is 5.2 inches, the breadth at the narrow waist 1.2 inch, and the thickness is .5 inch.

No other relics were recovered or noted, but at a later date I re-examined the top slab and also some of the stones said to have come from the cist. On one of these, a grey sandstone slab, stated to have



Fig. 1. Flint Adze.

been an end stone, I traced several markings recessed on the flat face towards the larger end (fig. 2). The stone is about 3 feet long and 21 inches broad at its widest part, being rather pear-shaped. The markings consist of a double elliptical ring about 7 inches long and 6 inches broad, the inner ring being roughly concentric and about 1 inch within the outer. The long axis is roughly parallel to the main centre line of the stone. A second similar set of oval rings is situated with their



Fig. 2. Ring-marked Stone.

centres about $6\frac{1}{2}$ inches from the first, but at right angles thereto and on the same parallel as the centre of the stone. Tangential to the outer ring of the upper ellipse is a groove running diagonally downwards to the central line of the stone and thence at right angles to form the bottom recess of a double U-shaped design on the opposite side of the central axis. A fourth carving, a single circle $3\frac{1}{2}$ inches in diameter, on the same lateral centre as the upper ellipse, completes a fairly uniform and balanced geometrical layout. These markings are all picked, not incised.

Double oval rings, whilst rare, are not unknown on stones from Bronze Age cists (*Proc. S.A. Scot.*, vol. lviii, "The Stone Cover of the Catterline

Cist"), but the double elongated U-shaped design does not seem to have been recorded hitherto in Scottish Bronze Age sculpturings.

2. Two food-vessels, much broken, were found about 3 feet below the surface and about 16 feet 3 inches above the level of the Boulevard. One has been reconstructed with a fair degree of completeness (fig. 7). It is 5.6 inches wide at the rim and is decorated with incised line markings.

The second pottery find consisted solely of the bottom portion of a food-vessel, of a finely made, smooth-surfaced clay of pale brown colour (fig. 7). The pottery is described in detail at the end of this report.

3. This was reported to me as being a cairn burial, the stones lying in cruciform formation. The long axis lay north and south. The structure was composed of large stones, laid to form a rude paving about 18 inches wide and about 6 feet long. The cross members measured about 3 feet 6 inches over the arms. The top layer of stones was placed some 2 feet below the surface.

There were said to have been four burials in two layers. The under burials lay, one on each of the two cross-arms, on a stone foundation and covered by a layer of stones about 12 inches lower than the two top burials. The stones were, apparently, not definitely laid but had the appearance of having been mostly thrown in. The largest stones were rounded boulders of about 12 to 15 inches long, and the others varied down to about the size of the human fist. On many of them were black marks of discoloration as though by fire.

Bones only, apparently incinerated, were found, both layers of burials being marked by an entirely different appearance: the upper was solid and hard, while the lower was soft and decomposed. The bones were rather scattered, each in its layer.

Professor J. C. Brash, of the Department of Anatomy, Edinburgh University, very kindly agreed to undertake the examination of the human remains found on the site, and I acknowledge my indebtedness to him for the detailed report which he was good enough to prepare.

No other relics were found. This burial was again entirely disintegrated, the stones being thrown out of their position on to the grass above. The elevation was about 16 feet above the road level.

4. A bronze knife was found, lying on a stone of andesite (fig. 3, Nos. 10 and 11). Two rivets survived, but the handle had perished. The stone was water-rolled, but flat on its face, and was said to mark a burial, many traces of discoloured and much decomposed matter resembling bone having been found. The bronze blade is $4\frac{1}{4}$ inches long and about $1\frac{1}{2}$ inch wide at its maximum. The rivet holes are $\frac{7}{8}$ inch apart and appear to have been punched out with a square-pointed tool.

The rivets themselves are $\frac{1}{8}$ inch in section and measure $\frac{3}{8}$ inch in length. They have, apparently, been hammered into square section, the surfaces

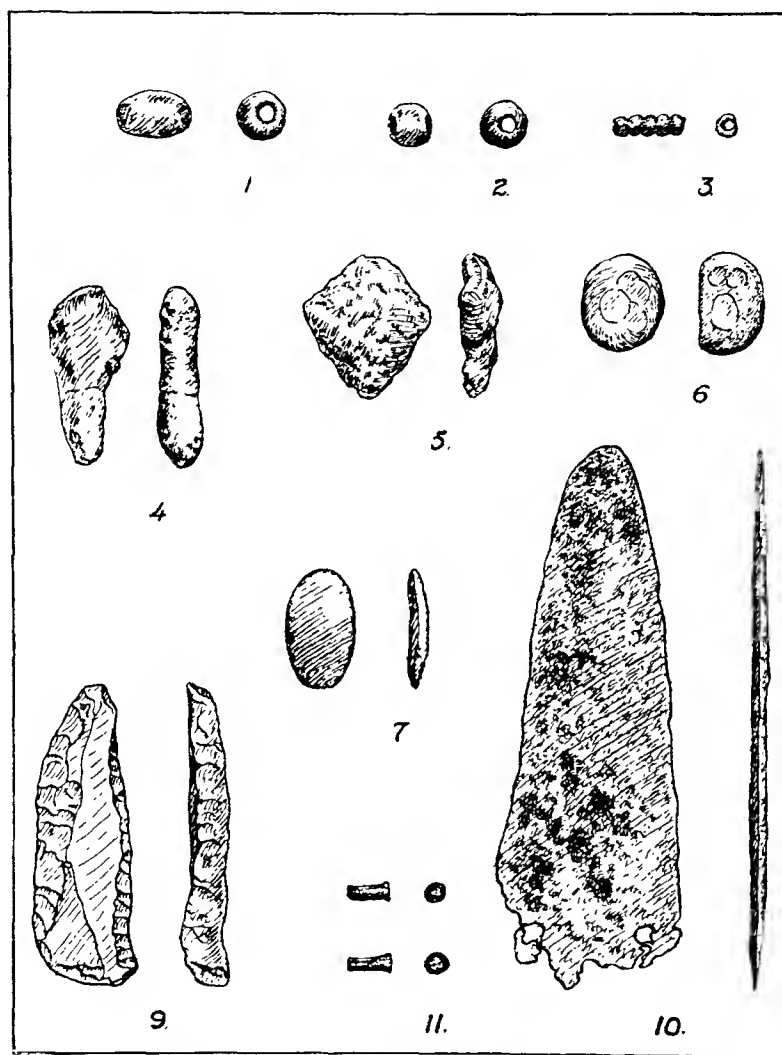


Fig. 3. Objects of Bronze, Flint, Lignite, etc. ($\frac{1}{2}$.)

being flat, and eventually they were made hexagonal by flattening the corners of the square. The riveting has not been severe, as the swelling of the head is small and the body of the rivet is not distorted to any extent in its section.

Probably the nearest occurrence of a knife of this description was at Glenboig, 9 miles east of Glasgow, the blade being found still in its sheath of ox-hide.

5. This was a stone setting of pear shape approximately 6 feet 7 inches in length and 4 feet 5 inches at its maximum width. It was built of eight large stones, set end to end, making an almost complete enclosure. The sand contained in it was sifted but nothing was found.

At a lower level, 6 inches down, the structure was further closed by an under layer of stones, leaving a small gap at the south-eastern side. Riddling failed to reveal any relics.

At the north end of the periphery of the structure the rim of a food-vessel was encountered below the corner of one stone and wedged between two others. All the parts of the vessel were subsequently recovered (fig. 8). It lay pointing northwards and inclined with its rim at an angle of 30 degrees to the horizontal. The stone over it was lifted, and the vessel, badly squeezed by pressure and extremely friable, was removed as it lay, filled with sand. It was not at that time examined either inside or outside. The remainder of the structure was then explored, and the gap referred to was found to be bridged by a stone at a lower level. Towards the south-east of the outside an intrusion of black humus was observed. No other relics were encountered.

6. A fragment of the rim of another food-vessel was recovered, but much sand had been removed by the contractors before its presence was noted. No stones or other associated relics were observed.

The fragment shows a highly ornamented vessel (fig. 9). The rim is blackened as by fire, but the pottery exhibits a fine texture, being of a light brown inside, fired to a deeper reddish brown on the outside.

7. A protruding stone drew our attention to the possibility of another structure just adjacent. In clearing the surroundings, a small stone structure, almost cruciform in shape and very obviously humanly fashioned, was disclosed. In order, however, to determine its relation to another large block, we cleared the ground, and on tracing the lie of the stones to the east there was seen its connection with this large end one. The two on the wings were highly set, and after the removal of the sand a complete crescentic setting was laid bare.

From the left wing the stones descend in crescent form round the bottom of the horse-shoe to the lowest point at the back, the eastern end of the large one continuing the crescentic formation upwards to its peak level at the outer edge of the right wing. A definite horse-shoe structure, open to the north, was thus uncovered. The greatest

width at the outside was 3 feet 6 inches, the greatest depth 30 inches, and the interior size of the horse-shoe 18 inches.

The sand in front was undisturbed, proving that no part of the structure was missing, and nothing had been removed prior to my uncovering it. The two outer stones were the largest and were of a fine blue-grey whinstone. The sand in the interior was sifted, and at the back about 9 inches below the level of the stone structure the rim of a complete urn of the food-vessel type was encountered (fig. 10). The vessel was tilted at an angle of 46 degrees from the horizontal. It was not quite centrally placed at the back of the horse-shoe, but rather to the north with the south side of the vessel coincident with the centre of the structure. The urn was facing out of the horse-shoe in a line 5 degrees farther east than the lie of the stone setting. We did not disturb the contents, so that they could be examined later on. Both the outside and the inside of the structure were examined, but no further relics were discovered.

The vessel with its contents was kept intact for some months. It was then emptied with a spoon before five witnesses. The material consisted largely of fine sand with an occasional pebble. Within the side on which the vessel was lying a small amount of sand of darker colour was encountered, this being, apparently, the remains of some food material carbonised and mixed with intruded sand. The amount of space occupied by the black material as compared with the remainder of the vessel was about one-tenth. From this one might infer that the food had shrunk very considerably and that it may have been in liquid form when placed in the vessel. It may have been of the consistency of a thin porridge. The proportion of one-tenth of black infilling to the total oddly resembles the proportion left over by quick roasting, as shown by experiment, of certain food products.

A sample of the black material was submitted to Mr Douglas A. MacCallum, F.I.C., F.C.S., who examined it microscopically and analytically. I am greatly indebted to him for his careful investigation. In his report appended, he considers that the content of the vessel suggests the possibility of a cereal, which may have been wheat or oats, the greater probability being oats. This result compares with the analysis of the contents of the Mount Vernon food-vessels which were submitted to him in 1928, by Mr Ludovic M'L. Mann, for examination, and which in contrast to the Knappers food-vessel suggested a more definite wheat content.

8. A small stone-built structure about 18 inches square and 15 inches high was laid bare by the removal of the surface material. The highest

part was level with the top of the sand, which at this point was 15 inches below the turf.

The western side consisted of one large sandstone slab set on edge, the top of which formed the west side of the altar-like summit and occupied about one-third of its area. At the lower west side this was reinforced by several smaller stones. The remainder of the pile was composed of smaller though substantial blocks of stone, chiefly whin, loosely kept together by sand, the small interspaces being filled with chips.

Nothing being observed from the outside, the sand was removed from the interstices, and the whole was scrutinised. Eventually the stones were removed, and on lifting the large slab it was found to be sitting on a block of white sandstone, dressed above and measuring 15 inches north and south, $9\frac{1}{2}$ inches wide at the north end, $11\frac{1}{2}$ inches at the centre, and 6 inches at the south end. The top of this foundation slab was not quite level, being 1 inch lower at the south end. No relic of any description was found within or without the structure.

The foundation slab of the understructure was then examined, but nothing was revealed. The bottom of the stone was embedded about 5 inches to 6 inches deep. After being lifted clear, a fine soft sand was noted, whitened in places and suggesting the presence of decomposed matter. This was cleaned off and collected. Below this the sand was sifted, but no relics were obtained, the only feature noted being the presence of many small quartz and whin pebbles, all of which were collected. The foundation was thereafter excavated, but nothing further was met with till about 12 inches down, when the undisturbed sand was reached.

The foundation slab was neatly dressed, the top being uniformly cut, leaving a raised strip about $1\frac{1}{4}$ inch wide round the edges, and the inside chipped about $\frac{1}{4}$ inch lower, giving the appearance of a definite panel. On this panel there appear certain incised lines or scores, which almost suggest the framework of a boat with masts.

9. This burial was entirely unmarked by stone or other means. The remains were collected and comprised a great number of bones and several teeth. The bones were hard and in a better state of preservation than those found in the upper layer of No. 3. On some of them was a green stain which might have been caused by contact with some small bronze article, which had subsequently entirely disintegrated.

Along with the bones was found a circular bead of lignite about $\frac{3}{8}$ inch in diameter, polished and pierced with a hole drilled from both sides (fig. 3, No. 2). The bead is of a squat barrel-shape, and the hole being drilled somewhat eccentrically, and rather larger at one end than the other, gives it an unbalanced appearance: the outer surface is marked with small

flat facets. After further riddling another bead of lignite was found. It is barrel-shaped, beautifully polished, and about $\frac{1}{2}$ inch long. The perforation is rather larger than in a modern bead. Later on there was recovered a small fragment of pottery about 1 inch square. It appeared to be a part of a vessel of considerable size. No other relics were unearthed despite careful riddling of the site.

10. A pocket about 6 feet in diameter and slightly saucer-shaped, appearing in the sand after the turf, 21 inches above, had been stripped off and the humus removed, attracted attention. Within this pocket the ground seemed to have been disturbed, and the sand was much discoloured with black matter having the appearance of being much decomposed. The depression was scooped out and riddled, and in the centre were discovered traces of red pottery of a crude type. Many small, broken, detached fragments were picked up, together with a tiny piece of white flint. About 9 inches down and lessening out to the sides the natural undisturbed sand was reached.

11. On 17th February the foreman reported that bodies were becoming apparent in the sand to the west of No. 8. On uncovering, the outlined skeleton of an extended figure was disclosed rather faintly in the sand, but by careful dusting the form was more readily perceived. The feet were towards the altar-like structure No. 8, and the body was lying 278° east of north mag. The remains lay about 6 inches below the top of the sand at this point, and about 24 inches below the grass. The head was not visible and appeared to have been severed. The top of the head would have been on the actual sand-loading face at the top of about 14 to 15 feet of sand. As the burial dried, the outline became more visible, and what had all the appearance of the shape of the natural body, with the framework of the bones showing prominently, remained damp. Between the legs the sand dried, throwing up the bones into an apparent relief in much the same manner as an X-ray photograph reveals the structure of the human body. The bones as a rule were very decomposed and soft and would not bear handling, but some of the larger were comparatively solid. To the north side there appeared to be another burial, but on examination this proved to be what we took to be the skull of the other. A piece of burnt flint, showing a breakage across as well as some evidence of human fashioning, was removed.

The skeleton was left undisturbed, as Captain Black had expressed a desire to see it *in situ* and because of the extreme difficulty of handling the osseous remains, which would require to be solidified in some way. Despite the fact that the burial was protected from the weather and from outside interference, it was noted to be gradually deteriorating, and on

gusty days it was in imminent danger of being blown entirely away. On again uncovering, the bones to the north side which we took to be the skull were blown about and scattered. The skeleton was, therefore, laid bare, and a strong solution of gum dammar in benzine was applied together with a binding of paraffin wax to assist in keeping it together on removal. Gear was prepared and, in the presence of the Dumbartonshire Police, a wooden box was constructed round the remains as they lay in the sand. A steel sheet with a serrated edge was sawn through the sand below the box, which now contained the burial, and the whole was removed for examination. The skull was lifted in a separate receptacle.

Further examination has not elucidated the mystery of this burial. Professor Brash reports that the head or skull is incinerated and that the body is not. He examined the remains minutely to determine whether the skull was possibly a separate burial from the inhumed one, and he quite definitely reports that no part of the incinerated remains is duplicated in the inhumed, and that, moreover, nothing but skull bones are present in the incinerated burial. It would appear, therefore, that either the skull was burned and buried beside the body, or, alternately, that a headless body was buried and a trunkless skull was burned and buried alongside it. The former would appear to be the more probable, but such a practice does not seem to have been noted elsewhere.

12. To the north-east of No. 8 there appeared, on removal of the soil, a stone which we investigated to see whether it might be part of another cairn. It proved so, and later stripping exposed a neat little cairn of elongated oval shape, consisting of eight stones, and measuring 27 inches long and 12 inches wide. It was 23 inches below the turf, and the top was 2 inches below the level of the sand. The lie of the structure was practically identical with the alignment of the skeleton, the direction pointing to the detached skull. The cairn was very compact and solid, and after careful uncovering, the stones remained in position, even when the foundation was slightly undercut in probing for pottery as in No. 7.

The sand between and below the stones was sifted, and a tooth was found in an excellent state of preservation but with the root cleanly sawn off, leaving the top about $\frac{3}{8}$ inch cube. Some other small objects were also brought to light, viz.: (*a*) another tooth, a first lower molar, sawn off similar to the last, but the inside was decomposing and only the shell, which was fragile, remained; (*b*) a fragment of the shell of another tooth; (*c*) some pieces of charcoal; (*d*) two pieces of bone; (*e*) a small pointed and worked flint.

13. On the high ground at the topmost part of the ridge, where the sand was only 10 inches below the grass, an urn was uncovered. The

workmen reported it as having been broken by the plough, but my impression did not bear out that opinion. The shards were in contact with a heap of bones quite compact and unscattered. Some of the pieces of the side of the urn were in adhesion, but the whole was in such a friable condition that nothing could possibly save it.

In the loose sand within the urn was found a small segmented bead of five conjoined sections of a total length of about $\frac{1}{2}$ inch and a diameter of $\frac{3}{16}$ inch (fig. 3, No. 3). The material is a greenish vitreous paste, but it has now become grey by chemical action. Two similar beads were found within one of the Stevenston¹ urns in association with one of a star shape, and all three had assumed a greyish aspect through the action of the phosphates in the incinerated bones.

All the fragments were collected and the surrounding material riddled, but beyond tiny shards and small pieces of incinerated bone and burnt wood nothing further was revealed.

On examining the main bulk of the sand structure on which this burial was superimposed, and which was quite hard, many small fragments of pottery were encountered. None of these had apparently any markings. The consolidated mass was not separated, but brought away intact.

15. A few days later another urn, again much broken, was unearthed. The fragments were extremely fragile, and disintegrated very easily. The urn was found 9 inches below the sand-level which, at this point, was 12 inches below the grass. The vessel is flat-bottomed and apparently about $6\frac{1}{2}$ inches in diameter at the base. The ware is of reddish-brown appearance on the outside and of fine texture. It is much discoloured and blackened on its inner side and in the core. In the largest fragment—that of the base—there was a solid mass of black material adhering to it. This was also submitted to Mr MacCallum, who reported: "This is a rough hand-made vessel made from red pebbly clay lightly burned. The bottom was covered with sandy soil containing rootlets like those of grass, and embedded therein were three pieces of charcoal about $\frac{1}{4}$ -inch cube each. The charcoal is very light in specific gravity and very soft, suggesting alder or other pithy wood, rather than the hard woods like birch, beech, or oak." These pieces of carbonised wood are more probably the result of slow firing or cremacausis rather than that of quick firing, and cannot, therefore, be taken as evidence of a cremation burial. The aspect of the material being soft and non-gritty bears out that these pieces of wood were in normal condition when deposited in the sand.

The whole site comprising this find was methodically riddled, and besides many more fragments of the vessel there were found two small

¹ *Proc. Soc. Ant. Scot.*, 14th May 1906.

scraper-like flints and about six very diminutive flint flakes together with a smooth lignite object (fig. 3, No. 7), oval in shape, $\frac{7}{8}$ inch long by $\frac{9}{16}$ inch wide and $\frac{1}{8}$ inch thick. From its appearance it suggests a tool or instrument utilised in the making of the incisions seen on the pottery found on the site. When drawn across a piece of soap, incised lines identical with those found on the food-vessel were formed. There were also found a tiny fragment of shell, a substantial lump of slag-like material, two small objects of greenstone, and a considerable quantity of charcoal.

16. Only 3 feet away from No. 13 and unassociated with any urn, cairn, or other structure, another burial was encountered. It lay at a depth of 9 inches below the sand and comprised a compact mass of bones. All those were collected, and after their removal we searched the surrounding sand until we reached the undisturbed material below, but nothing further came to light.

17. On the western face of the sand-pit, on the slope cut away by the formation of the Boulevard and near the top, there appeared a substantial stone which at first suggested the possibility of its having been placed upright there to prevent the sand moving down the slope to the roadway. I, therefore, approached the site with a considerable degree of scepticism. Excavation, however, proved it to be another cairn, a well-built circular structure, open in the centre, with a large slab of micaceous schist on the north side.

The cairn consisted of thirty stones symmetrically built together. The structure was 5 feet 5 inches along its east to west axis and about 5 feet across. Round the outer periphery it measured 17 feet 2 inches and round the inner 7 feet 9 inches. The whole was cleared on the outside and inside, and the sand put through a very fine riddle. Only a small piece of pottery, a few isolated and minute scraps of bone, and one or two of rather more substance, probably fragments of a skull were found. Some very small pieces of charcoal were also recovered with these relics.

After the removal of the smaller stones of the structure a particularly fine piece of constructive work on the south side was noted: on its outer edge the stones were carefully set, overlapping one another round the periphery.

By removing the most accessible stones a new formation became evident, and eventually a well-proportioned stone cist, constructed of the larger elements forming the ring cairn, was revealed. The north and east walls were 1 foot 5 inches high, the south was 1 foot 6 inches, and the west 1 foot 4 inches. The inside of the cist from north to south measured 2 feet and from east to west 2 feet 5 inches. The north slab

measured 2 feet 8 inches long by 17 inches deep and 5 inches thick. The axis of the cairn lay in the direction of the main slab, 90 degrees east of north magnetic.

The structure, therefore, might almost appear to belong to two periods, that of the short cist with an urn burial, of which the only surviving feature, other than the primary cist formation, is the fragment of pottery with markings resembling those described by Dr Callander in his paper on "Scottish Neolithic Pottery,"¹ fig. 55, No. 8. and that of the later period of the ring structure with the few fragmentary



Fig. 4. Grave Deposit, No. 17.

remains of another burial. This ring construction, impressive though it be, is not unique in Bronze Age burials, another with similar features having been found in the same parish, within the Roman fort at Old Kilpatrick, by Mr S. N. Miller, when excavating the fort in 1923. This was reported on at a later date by Dr Callander.²

18. The finding of another urn was reported to me by Mr Rogerson. It was about 9 inches below the sand and 18 inches below the grass. This vessel was also in a very fragmentary condition. There were about fourteen pieces, the largest of which is about 4 inches square and about $\frac{1}{2}$ inch thick. The pottery is coarse, and from the outline of the fragments it would appear to be a vessel of about 12 inches in diameter.

¹ *Proc. Soc. Ant. Scot.*, vol. lxiii.

² *Trans. Glas. Arch. Soc.*, vol. viii, p. 55.

The markings of maggot design with which it is decorated are very pronounced. Very little of the vessel remains.

Sticking to the inner surface, in addition to the adhesive sand, was a fine bone-like dust, probably indicating incineration. Only one fragment of bone and a tiny flake of flint were found, though a substantial piece of smooth shale $2\frac{1}{2}$ inches by $1\frac{1}{4}$ inch by $\frac{3}{8}$ inch was recovered from the same site.

19. Another stone structure of altar-like appearance was unearthed. The uncovering of the sand proved to be more difficult at this point, as it appeared to have been formed into a large saucer-shaped depression about 30 feet in diameter and about 2 feet deep towards the centre. Many similar depressions had been noticed, but none of this magnitude. Towards the centre of this hollow the structure had been built. It consisted of one large stone of oval section with a flat top standing up 14 inches from a flat stone lying horizontally to the west of it. Both of these were erected on what appeared like a foundation of small rounded stones.

The whole of the circular hollow was cleared and was found to have a solid bottom or floor of a hard scale-like substance which flaked off like iron rust. It swept up quite clean, but vigorous brushing caused the scale to flake away. A sample of this material was submitted to Mr Robert Allan, Metallurgist of Gartsherrie Iron Works, Coatbridge, for analysis, and he was good enough to report as follows:—

2nd May 1934.

ANALYSIS OF MATERIAL FROM KNAPPERS SAND QUARRY.

Oxide of iron	10.71 per cent.
Silica	73.70
Alumina	7.42
Oxide of manganese	0.70
Lime	0.84
Magnesia	0.83
Sulphuric anhydride	0.04
Phosphoric anhydride	0.73
Loss on ignition	4.90

After brushing, the area of the depression occupied by this flooring appeared to be about 10 feet in diameter, with a cut-away at the north-east. The structure occupied the east side of the depression.

The altar-like foundation was then cleared, and the pavement of

stones was found to point towards the west. Taking the upright stone as the base, it formed a triangle with a base 4 feet and sides 5 feet long. On this foundation being removed, other stones appeared below with no definite arrangement. On removal of the two main stones the eastern end appeared to be curved, giving the whole plan a kite-like shape. No relics were found, and the stones of the foundation were set on the hard scale-like flooring already noted.

20. About 18 inches below the grass there appeared on the surface of the sand the top of a rounded boulder which had a depression picked out on its surface. The stone is approximately 12 inches in diameter and appears to have served as an anvil stone.

21. Another large stone appearing below the level of the sand, which at this point is 2 feet 9 inches below the turf, suggested another burial. On excavation, this looked like another minor cairn, consisting of only three stones. The general lie was due north and south mag. The stones were uncovered, but except for minute pieces of bone and decomposed matter, and a small triangular green flint of pyramid shape with one smooth side, nothing was discovered. The two east stones proved to be parts of one block.

22. This structure was noted by the presence of a fairly large boulder appearing 4 inches below the level of the sand. It consisted of four stones only, rather disconnected. They lay in line, the axis 5° east of north mag., the two outermost being the larger. The structure measured $34\frac{1}{2}$ inches along its major axis. The stone to the north was the largest and measured 13 inches by 9 inches by 6 inches. The second was a small fire-blackened sandstone. Number three, of red sandstone with quartz veins, was cubical and angular. The fourth was a rough whin and measured 10 inches by 6 inches by 7 inches deep. The structure was less impressive than any hitherto noted, and would hardly have been recognised but for the absence generally of isolated stones of any size in this sand-pit, and because of a burial with which it appeared to be associated.

Directly on the north-south axis of the structure and at a distance of 7 inches from number four stone (south) were three molars, one incisor, and a fragment of an upper jawbone containing four teeth. A little matter almost wholly decomposed was observed amongst the sand; probably it was part of the jawbone but it was not adhesive enough to permit of its being lifted. Below this was found a perfect specimen of a lower jawbone with a set of sixteen teeth, 3 feet under the turf. The front teeth seemed worn, and the back tooth at each side of the jaw was set at a distinctly lower level than the others. The teeth were

very fragile, and as it appeared to be impossible to touch them without injuring them, Mr J. H. Russell, Dentist, Charing Cross, Glasgow, accompanied me to the site and made a cast of them *in situ*. I am indebted to him for the accompanying report and also for the cast.

From the position of the jawbone the apparent lie of the body in the sand could be detected, there being a definite marking like the section of a trench. The bottom of this trench or grave, which was only 12 inches wide, was 3 feet 1 inch from the turf. Some 7 inches from the bottom to the right it widened out to about 15 inches from the



Fig. 5. Grave Deposit, No. 24.

centre, and on the left at 9 inches up it contracted to about 11 inches and widened out to about 18 inches from the centre.

23. In examining the sand-face the presence of bone was noted, and it was necessary to cut a landing on the vertical face to investigate it. A quantity of bones indicated a complete burial, so layers were stripped from the top and riddled. The burial was placed 12 inches below the sand, without a mark of any kind. A number of the bones, which were much broken, showed signs of green staining. No teeth were discovered. One small fragment of flint and many fragments of charcoal were found amongst the bones.

24. A stone protruding above the sand attracted attention to this burial. On excavating, a well-built structure was exposed. Sometimes the stones were laid in courses, but in places single large stones occurred.

The structure was mainly crescentic but had a central S-shaped division dividing the crescent into two almost equal parts, which were not unlike mushroom shape. The building comprised eighteen stones and measured 3 feet across the wings. The depth over all was about the same, and the central division projected about 9 inches beyond the ends of the walls. The stones were, for the most part, naturally rounded boulders. Inside, near the top, a small flint was found along with comparatively large quantities of charcoal. About 2 feet lower much discoloured sand and decomposed matter were encountered. Only one fragment of bone and three more tiny flints were discovered.

25. A wind-blown tooth induced the search for another burial, which was located west of No. 22. A number of teeth in position were found, but owing to a high wind they were being rapidly scattered. As they could not possibly survive, the whole was lifted bodily. There was no other sign of the burial. From the site of the skull two small pointed flints were recovered.

26. About 10 yards west of No. 22 another burial became evident on the sand-face at the highest part of the ground and about 1 foot below the sand. A skull in a fair state of preservation, and later part of the jaw containing several teeth in place and another part with three more were recovered. They were very fragile. A number of other teeth were found, together with several humps of charcoal and two fragments of the shell of a hazel nut.

27. This burial was marked by a single stone, ovoid in shape, dressed and cut towards the south. The long axis lay 305° east of north mag. The top of the stone was 21 inches below the turf, the sand here being 15 inches below it. The stone seemed to be centrally placed over the burial as the marks of the human remains in the sand showed evenly round. Two small flints were found, and much decomposed matter extended for 3 feet to the south of the stone. A considerable quantity of charcoal was encountered, together with a fair amount of red oxide-like matter and some tiny fragments of bone.

28. The tops of stones beginning to appear above the sand led us to another formation of diamond shape. It consisted of about twenty-four stones, four of which were much larger than the others. The upper stone was 21 inches below the grass and 3 inches below the sand. The layout was symmetrical in form, the long axis being 215° east of north mag. The dimensions were 5 feet 3 inches long and 3 feet 7 inches broad.

Riddling the sand around and below the stones failed to reveal any relics other than some fragments of bone, a considerable quantity of wood charcoal, one flint chip, a little round grit-stone pebble, and a small smooth

black stone like a Molucca bean. A number of the smaller stones of the structure appeared to be fire-blackened.

29. This burial produced nothing more than a considerable portion of a skull. The lower jaw appears to be complete, but the teeth are absent. With the skull so comparatively well preserved we searched for the body, but only one small piece of bone, which might be part of the skull itself; some few fragments of charcoal were recovered.

30. Only a few teeth and a fine specimen of black flint, finely shaped, were found.

31. Another skull was reported to have been found in position, but on removing some teeth which appeared to be in danger of dispersal, the whole collapsed. A large portion of the skull and a fragment of jawbone with three much-worn teeth in place were recovered. The jaw was in good condition. Some teeth were fragmentary and fragile. We riddled the site, but came across little except some fragments of bone and a small white flint.

32. Some pieces of bone and teeth led us to this further burial. The teeth, unlike many already found, appear to be unworn. From the locus of the skull there was taken a rough-pointed piece of white flint, somewhat shaped like a spear-head with no apparent work on it. We riddled the whole site, but got only much-decomposed matter, some fragments of teeth, and some pieces of bone.

33. Searching along the edge of the sand-face we came across distinct signs of another burial which seemed to indicate more fully than we had previously ascertained how bodies were placed in the sand. The bony material forming the skull was quite obvious, as was the outline of the trench for the burial. This lay below 18 inches of turf and loam, and the trench forming the grave extended downwards a farther 18 inches. In general it was 18 inches wide, but on the right side at 13 inches from the bottom it spread out sharply to 2 feet 3 inches higher up. The bone, which was much decomposed, formed a fairly compact mass at the bottom of the trench. We had a sleeper staging built to photograph this site, and on trimming up the sand-face the oval form of a small skull appeared quite plainly. It measured 5 inches horizontally and $4\frac{1}{4}$ inches vertically. The trench showed up well.

Adjacent to this burial the sand gave every indication of having been disturbed, and two more graves were located. The centre one was the largest, measuring 23 inches wide, and lay at a distance of 23 inches from the middle of the last. The sand was 20 inches below the turf at this point, and the burial extended 22 inches farther down into the sand. The third was 18 inches wide and was 30 inches from the centre of the

middle one. The soil here was 22 inches deep and the burial penetrated a farther 18 inches into the sand.

After photographing these, we uncovered them, but except in the case of the first, where we got a substantial piece of bone, we found nothing more, as the skull and teeth were too much decomposed to lift.

34. Burials unmarked by stone or cairn had been the feature for some time, but the appearance of stones level with the sand again suggested the possibility of further burials associated with structures. On stripping this site a setting of two upright stones set parallel with a single outlying stone in line at right angles was seen. The main block was neat, consisting of two large rounded stones on end with two smaller stones between them. The west stone was a roughly rounded boulder of white sandstone, and the parallel stone at a distance of 3 inches therefrom was a smoothly rounded whinstone with marks of striations or chippings. The side facing into the structure was quite flat. Between was a chipped red sandstone, the outer edge of which coincided with the outer edge of the two main stones. To the north was also a smaller stone of red sandstone. This and one of the main larger stones were both much blackened as if by fire. The measurement over the two stones was 14 inches, and the distance to the outlying stone was 2 feet $8\frac{1}{2}$ inches.

In the direction of the lie of the stones and centrally placed was clearly seen a burial marked in the sand, but there were no tangible remains, the matter having entirely decomposed. The main setting of the stones appeared to cover the head, and the outlying stone to mark the lower part of the body. In riddling we came across signs of bone, tiny fragments of the enamel of teeth, and much black decomposed matter.

In the course of the work of removal of the sand a number of objects were found not definitely associated with any particular site.

OBJECTS OF STONE.

(a) Stone for grinding stone axes (fig. 6). This is a large block of grey sandstone measuring 12 inches by $7\frac{1}{2}$ inches by 9 inches deep. The top is smoothed into a concave surface by the action of grinding, the centre being hollowed out to about $\frac{3}{4}$ inch deep.

(b) Hammer-stone of brown sandstone $2\frac{3}{4}$ inches in diameter and $3\frac{1}{2}$ inches long. The ends are rounded, and much pitted and abraded by use.

(c) Stone ball $1\frac{1}{2}$ inch in diameter, smooth on the surface and pitted with marks where the surface has been scaled off.

(d) Knife of brown flint with a beaked point, about $2\frac{1}{4}$ inches long and $\frac{3}{4}$ inch broad. One side only is chipped in three main planes. Along the edge there is a continuous retouched edging extending from the nose to the butt end. This redressing has been done at a much later date than the making of the tool (fig. 3, No. 9).

(e) A small finger-like flint object of dark green colour $1\frac{3}{4}$ inch long and $\frac{5}{8}$ inch in greatest diameter. It tapers to a rounded point. The butt end has been cut off half-way across, and at the corner thus formed there is a small hole as though drilling had been attempted.

(f) Triangular flint $2\frac{1}{4}$ inches along each side and $\frac{7}{8}$ inch thick. It appears to be definitely worked, as each of the three sides is flaked or chamfered off. It is very smooth, water-rolled, and is highly patinated a deep dark brown colour all over, except at the bottom which bears the impress of the nodule and is almost black.



Fig. 6. Stone for grinding Stone Axes.

OBJECTS OF FIRED CLAY.

A small spatulate object of clay, mingled with small, rough, gravelly material and fired to a light brown. The relic is $1\frac{1}{2}$ inch long and $\frac{5}{8}$ inch wide about $\frac{1}{2}$ inch from the butt end, which is diamond pointed, the other end, $\frac{3}{8}$ inch in diameter, being roughly rounded (fig. 3, No. 4). The texture of the clay does not suggest a prehistoric origin.

A diamond-shaped object slightly concave on its inside as though for superimposing on the exterior of a pottery vessel (fig. 3, No. 5). The sides are each about $\frac{3}{4}$ inch long and its thickness at the centre is about $\frac{3}{8}$ inch.

A small globular object of fine red clay about $\frac{3}{4}$ inch in diameter, with flattened base. The surface is smooth but not regular, having all over it a great number of minute flattenings (fig. 3, No. 6).

POTTERY FOUND AT KNAPPERS SAND QUARRY.

The fictilia falls into six classes. The historical group consists of casual finds, of accidentally intruded fragments, encountered during the sand digging. It consists of three sets:—

(i) A few unmarked wall fragments of a green glazed mediæval ware.

(ii) Two small, unglazed, reddish-brown shards. They have horizontal rows of small, closely set discs in relief, bordered on either side by a raised moulding.

(iii) A very small rim fragment of a thin, compact, grey-black ware, of fine plain surface, probably Roman.

The balance of the pottery collected belongs to the earlier phases of the Bronze Age, the bulk of the specimens being food-vessels. No traces were found of the coarse ware of the Early Iron Age, nor of beakers nor Neolithic round-based vessels. With regard to the fictilian industry in the Glasgow district in the Early Bronze Age, it may perhaps be noted that beakers are very scarce, while food-vessels are markedly numerous.

The maggot design is frequently found on the round-based ware, resembling the food-vessel. It began in the latest Neolithic phase and was carried over to the transition period between that and the Bronze Age, during which the bases still retained their rounded form. The design still continued during the earliest Bronze Age when the round base fell out of fashion and the flat base came into vogue. The Knappers specimen seems to belong to this last-mentioned phase of culture.

The maggot pattern on round-based ware with thick walls seems to have been first noted during excavation at Glenluce, Wigtownshire, by Mr Ludovic M'L. Mann. The specimens were shown in Glasgow at the Exhibition in 1911,¹ and have since then been on view in the Kelvingrove Museum there.

The final class seems to be more in the style of the large cinerary ware which entered the field in the middle and later Bronze Age, but the fragments are very scrappy.

To summarise, the vestiges of pottery seem to congregate round the beginning of the Bronze Age.

Main Dimensions of Food-vessels.

No.	Dia. at Rim.	Dia. at Shoulder.	Dia. at Base.	Height.	Depth of Shoulder.	Thick-ness of Walls.	Thick-ness of Base.	Width of Rim.	Angle of Rim to Horizontal.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Degrees.
2	6	6	3·2	5·2	2	·4	·6	·5	44
2A	...	...	2·2	...	...	·4	·6	...	...
5	5·6	6	2·5	5·2	1·7	·3	·3	·7	40
6	6	6·2	...	...	1·4	·3	...	·7	29
7	5	5·4	3·2	4·1	1·5	·7	·9	·7	curved

¹ See p. 875 of the *Scottish Historical Exhibition Official Catalogue*.

Description of the Pottery.

2. The contour of the wall of this vessel consists of an upper zone, slightly curved from the rim to a shoulder, from which it tapers to a flat base, the outline curving near the base so as to become vertical at about 1 inch above it (fig. 7).

The rim is in two parts, an inward sloping surface bearing two concentric lines of impressed twisted cord markings, while there is a slight



Fig. 7. Food-vessel and base of another.

bevel sloping outwards on the outside of the lip bearing a series of vertical, twisted cord impressions.

The decoration of the upper zone consists of string markings in the form of vertical chevrons.

The vessel, below the shoulder, is ornamented over its entire surface by vertical zigzags in three zones, incised with a sharp-pointed instrument. These lines very rarely cross one another at the limits of each section.

The food-vessels do not show any variation in their make-up from a clay, hand-made and kiln-fired. The clay was apparently reinforced with an admixture of crushed stony fragments, which resulted in yellow-coloured vessels, slightly reddish, with dark interiors.

2A. This is a fragment of about one-half of a food-vessel, the flat base and the wall remaining to a maximum height of some 3 inches

(fig. 7). About $1\frac{3}{4}$ inch from the base the wall is decorated by two horizontal rows, each consisting of herring-bone incisions, scraped out with a sharp-pointed instrument.

5. This food-vessel, while of the same contour as its companions, has a more distinguished and attractive aspect (fig. 8). The upper zone is more deeply curved in vertical section, the tapering of the lower part has more character and decision, the wall in this part being straighter and more obliquely set, while the ridge dividing the upper from the lower parts has a deep furrow horizontally set in its middle crossed by imperforate lugs.

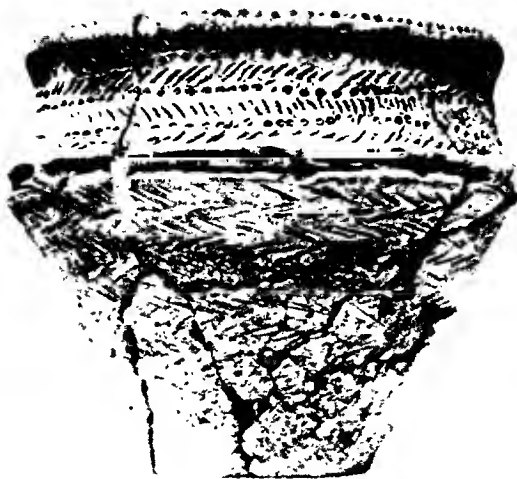


Fig. 8. Food-vessel.

The rim in its inner side slopes downwards, and this portion comprises three sections in three concentric circles, the innermost bearing a succession of impressions made by a round-pointed tool pressed from the interior upwards and obliquely set, all in one direction. In the contrary direction a set of similar markings is worked by pressure from the top of the rim downwards. Between these two rows are a succession of depressions made

by a rounded hollow reed. On the outer side of the rim is an assemblage of markings like the last described.

The ornamentation of the upper zone is of the same character as that of the rim. There are four rows of short lines made by the dabbing of a pointed instrument, each row being at a different angle from that of its neighbour. Between these rows are three series of circular impressions made by the end of a hollow tube.

The tapering portion of the vessel is decorated with impressions made by the same blunt-pointed instrument used in the upper section. The lines are much longer and set in a rough zigzag manner so as to cover the whole area of this zone and yet give the aspect of four bands of decorations.

6. This consists of a rim fragment of a food-vessel with incised lines obliquely set with unusual compactness (fig. 9). The upper zone, in horizontal sections, is entirely occupied with such markings. In the upper and lower sections the lines lie at the same oblique angle about

12 to the inch; the middle section is very narrow, and the incised lines run in the opposite direction. Beneath the shoulder a small section survives on which obliquely set cord-markings may be discerned. On the lower slope of the ridge at the shoulder the vessel is ornamented with a row of short obliquely set lines made by twisted cord. The angle of these lines is contrary to those in the sections immediately above and below it.

The rim is broad and inwardly sloping, and upon it is set a row of sloping lines closely situated together, made by impressions of twisted cord, now rather faint. These occupy three-quarters of the inner area of the rim, which is completed by a panel, on the outer portion, of like markings set at an opposing angle.

7. This food-vessel was the most perfect found on the site and is

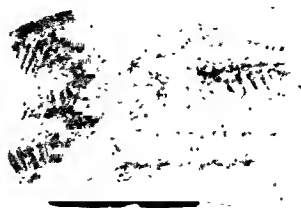


Fig. 9. Fragment of Food-vessel.



Fig. 10. Food-vessel.

in marked contrast in contour and decoration to the others mentioned (fig. 10). Its height is less, and the double shouldering divides the walling into three horizontal panels of equal depth. The inward sloping rim is slightly curved convexly.

The rim is decorated with V-shaped incisions fairly broadly spread out and emphatically impressed.

The decoration on the upper zone consists, in its lower section, of a chain of connected diamond designs made by a pointed tool. The upper portion is occupied by obliquely drawn incised lines apparently by the same instrument. These lines are set sloping at opposite angles and are intermixed by overlapping. The middle zone is decorated by similarly worked incised lines forming irregular horizontal zigzags. On the lower zone the same tool has again been used for the incisions, which consist of vertical zigzags of four parts.

9. These are very small unornamented fragments of fine-surfaced Bronze Age ware, the largest of which is about 1 inch square and $\frac{1}{2}$ inch in thickness. Neither the shape nor the size of the vessel can be determined.

10. This is a group of small crumbled fragments of similar aspect.

13. Urn with incinerated bones. About twenty-four fragments of this vessel were recovered, the largest being rather more than 2 inches square. None of the pieces were ornamented. The vessel appears to have been about 5 inches in diameter. The wall is $\frac{1}{2}$ inch thick.

The pottery is a light brown clay, smooth on the outside and rather rough on the inside.

15. This is a set of nineteen fragments found close together representing a flat-based pot apparently about $6\frac{1}{2}$ inches diameter at the base. The largest surviving portion is that of a segment of the base about 4 inches along the arc and with about 1 inch of the wall standing, which is about $\frac{3}{8}$ inch thick. The bottom portion is $\frac{1}{2}$ inch thick.

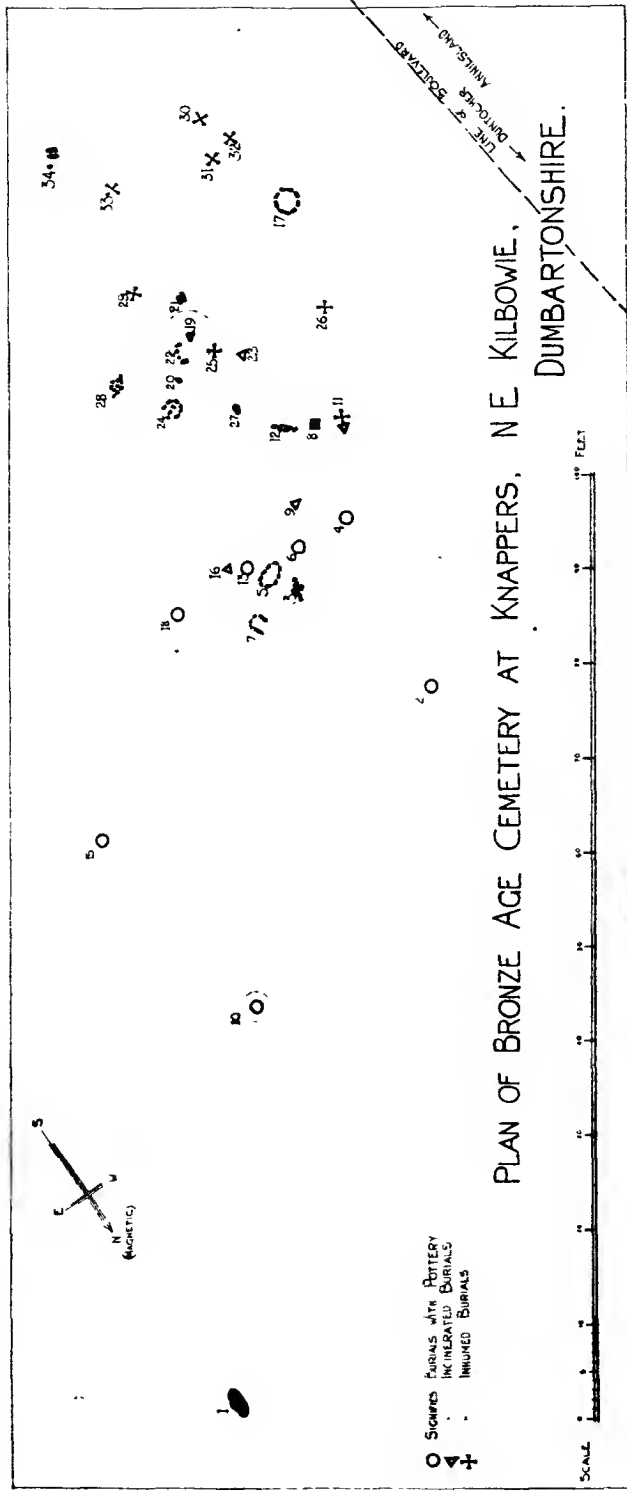
The aspect of this vessel is darker than the food-vessels just noted and the texture is harder and more compact, while the contained crushed pebbly material is of larger units. It is perhaps of somewhat later period though still within an early portion of the Bronze Age.

17. This is a very small fragment of Bronze Age ware with impressions made by a blunt-pointed tool. It does not appear to belong to any of the other groups and was found isolated.

18. Fourteen fragments comprise this group. The vessel is of somewhat coarse ware and in crumbling condition. It is of a very pale red material with black interior.

It is difficult to make out the exact contour of the wall, but it has had three sections: An upper zone, almost vertical, the curvature being very slight and bordered by a rather broad shoulder ridge. The middle ridge is again almost vertical and terminates with a rather prominent ridge at its lower edge, from which the wall slopes inward rather sharply in the lower section to a base now indeterminable.

The upper zone is nicely decorated with two horizontal rows of short,



Plan of Bronze Age Cemetery at Knappers

vertical impressions, made probably by a rough cord wound round a core.

The shoulder border in the upper section is decorated along each of its sides with horizontally placed plain dab markings, the point of the tool being rather triangular in shape. In the panel beneath there are two rows at least of rather badly defined impressions, as if made by an instrument having two points at its end. The surface of the inwardly sloping rim shows again dab markings of somewhat the same character, the point of the tool being broad and triangular.

POTTERY UNASSOCIATED WITH ANY DEFINITE SITE.

1. This group of fragments contains a large piece showing a portion of a rim and an undecorated upper wall. The rim consists of an inward sloping side and projects prominently outwards. There is another small fragment of rim of the same aspect. These shards resemble No. 15 in texture and are probably contemporary.

To all the experts who have rendered me professional assistance in the analysis of the materials gathered during the course of this work, I acknowledge my indebtedness, and, in addition to those whose reports are appended hereto, I desire to record my grateful thanks to Mr Ludovic M'L. Mann, F.S.A.Scot., who has, during the period of his own incapacity through illness, guided and advised me in many phases of this work. To Mr George Jamieson I am indebted for his assistance in preparing the photographic record of the discoveries. To my friend Mr John Gentles, F.S.A.Scot., who has, during the fourteen months of our work on the site, been my constant and valued assistant, and who has, moreover, rendered material assistance in the preparation of the plans and sketches, I desire to express my appreciation of his services so freely rendered.

APPENDIX I.

REPORT ON THE HUMAN REMAINS. By Professor J. C. BRASH, University of Edinburgh.

- No. 3. "Skull bones from two top cross burials." Fragments of skull cap and facial bones. Young adult.
"General bones of two top burials of cross site." Small quantity of fragmentary bones of limbs and trunk.

- "Bones together with skull bones of bottom burial of cross site." Small quantity fragmentary limb bones. All these bones appear to have been incinerated (?).
- No. 9. "General bones of burial from lignite bead site." Fragmentary limb and trunk bones.
- "Skull from lignite bead burial." Fragmentary skull-cap bones. Young adult (?). All these bones appear to have been incinerated (?).
- No. 11. Very fragile portions of upper and lower limb bones. Male adult. Few fragments of skull including fairly complete right temporal bone.
- No. 12. Crowns of two molar teeth.
- No. 13. Quantity of very fragmentary incinerated (?) bones.
- No. 16. Quantity of very fragmentary incinerated (?) bones, probably young person or female.
- No. 17. Few small fragments of skull bones, incinerated (?).
- No. 22. Few skull fragments and number of teeth, mostly crowns. Adult. Plaster cast dental arch of mandible. All teeth present. See Report by Mr J. H. Russell. The impaction of the third molar teeth is a very interesting feature.
- No. 23. Quantity of incinerated (?) fragments.
- No. 25. Five teeth, crowns only.
- No. 26. Fragments of skull cap. Adult. Mature. Several loose fragile teeth. Portion of base of skull with attached portion of right maxilla. Three molar teeth *in situ*. Third molar small and unworn. Portion of body and right ramus mandible with two upper molar and three molar teeth *in situ*. Third molar unworn, others moderately worn.
- No. 29. Skull. Left parietal. Portion of right parietal. Occipital bone. No apparent union of sutures. Young mature adult. Portions base of skull including two temporal bones; several cervical vertebræ, including broken atlas and axis. Fragmentary portion symphysis region of mandible. No teeth.
- No. 31. Few fragments limb bones. Portion left parietal, probably young adult. Portion left side of body of mandible. Three molars *in situ* moderately worn. Fragments of temporal bones and atlas and axis. Seven or eight broken crowns of teeth.
- No. 32. Fragments of bones of skull including both temporals; fragments of atlas and axis. Six broken crowns of teeth.
- No. 33. Portion left temporal bone.

The condition of all the bones is such that no conclusions of any value can be based upon them, other than the tentative suggestions regarding age.

APPENDIX II.

REPORT ON MANDIBLE (Site No. 22). By J. H. RUSSELL, Dentist, Glasgow.

I was invited by Mr J. M. Davidson to examine the teeth of a Bronze Age burial, found at Knappers Sand Quarry, Clydebank. I visited the site, and found a complete mandible exposed in the sand on the high ground of the quarry, about 3 feet below the grass. The teeth were extremely fragile, and as they would not stand removal without complete disintegration, I examined them *in situ* and took all notes and measurements before making a plaster cast of the mandible.

The distances apart of the teeth are:

The wisdom molars	58 mm.
The 12-year-old molars from medial sulci	50 ..
The 6-year-old molars	48 ..
Bicuspid	40 ..
First premolars	35 ..

The wisdom teeth are impacted. The occlusal surface of the teeth is good. The 6-year-old molars and the bicuspid on each side are almost devoid of sulci, signifying much wear. On the contrary, the sulci of the 12-year-old molars is deep, which may be accounted for by the want of an antagonistic tooth in the maxilla. The general type of arch is V-shaped, the laterals lying slightly irregular to the lingual side, the centrals being slightly protruding. The outer incisal edge of the canines has a tendency to lean with a lingual aspect. The maxilla, or upper jaw, would be slightly broader than the lower.

The teeth are too far decomposed to allow of a definite opinion as to disease. On drawing the reverse or original impression, however, I found the dentine to be almost perfect, as far as the eye could judge, but complete decalcification had taken place. The pulp chambers were perfect in shape, showing good root canals.

The enamel had stood the ravages of time better than the cementum and dentine, the teeth being free from caries. The most interesting point of view is the elevated lingual line of the bicuspid and molars on both sides. Those elevated lingual lines have a tendency to prove that the maxilla was broader than the mandible, and that the mandible would

be tighter at the angle than is found at present in man. The interior aspect of the mandible from the angle to the canine ridge must have been very heavy to withstand the masticating action of the jaws.

With regard to the type of face to which this mandible would belong, my impression is that the lips would protrude beyond the chin; that the angle of the jaw would appear to be narrow and the lower part of the face short, with the jaw merging in general into the neck. There is no great width, but no want of strength, as witness the perfect occlusal line of the bicuspid and molars, with the internal line strong to take up all strain.

APPENDIX III.

REPORT ON CONTENTS OF FOOD-VESSEL.

By DOUGLAS A. MACCALLUM, F.I.C., F.C.S.

SAMPLES FROM BURIAL URN AT BRONZE AGE SITE AT KILBOWIE,
FROM J. M. DAVIDSON, ESQ.

Site.—Knappers Sand Pit, Kilbowie Road.

Discovered early in 1934 by J. M. Davidson and Wm. Rogerson.

Food-vessel found in a crescent-shaped cairn.

Vessel opened 27/8/34.

Material to be examined: suggested food remains found within food-vessel.

Total weight, 88 gm.

Consisting of 1 large pebble	12 gm.
1 smaller pebble	7 ..
on $\frac{1}{8}$ -inch mesh small gravel	8 ..
„ $\frac{1}{2}$ -inch mesh coarse sand	4 ..
„ $\frac{1}{4}$ -inch mesh fine sand	28 ..
through $\frac{1}{8}$ -inch mesh fine material	29 .. ¹
	<hr/>
	88 ..

One-half of this last material, *i.e.* through $\frac{1}{8}$ -inch mesh sieve, was next separated by float and sink test at 1.4 specific gravity, *i.e.* that of sand, washed and dried.

Heavy, <i>i.e.</i> fine sand	13.70 gm.
Light (?). . . .	0.37 ..
Moisture	0.43 ..
	<hr/>
	14.50 ..

¹ On examination under the microscope this shows quartz grains, *i.e.* sand and black peaty-like particles.

	Analysis.				Calculated.				Leaves Food Ash?	Per cent.	Standard Ashes of		
	Sink 13.70 gm.		Float .37 gm.		Clean Sand.	Per cent.	Deduct Extra Iron. Lime, Magnesia.*	Per cent.			Wheat.	Oats.	Barley.
	1 gm.	Per cent.	.37 gm.	Per cent.	C.								
						A.	B.	C.			Per cent.	Leaves Food Ash?	Per cent.	Deduct Sand and Organic Matter from B.
Loss on ignition .	.0583	5.83	.0726	19.60	1.32	19.60	19.60	. .	. .	. .	. .	. .
Insoluble silica (sand)	.8742	87.42	.2550	68.63	95.72	68.63	68.63	. .	. .	. .	. .	. .
Soluble silica .	.0015	.15	.0010	.27	.07	. .	. .	3.44	3.44	19.1	1 10	1 49
Iron and alumina	.0445	4.45	.0207	5.59	1.58	1.58	1.58	4.01	51.22	1.2	0 3	.1 2	
Lime .	.0063	.63	.0063	1.70	.33	.33	.33	1.37	17.50	2.8	1 8	1 10	
Magnesia .	.0081	.81	.0063	1.70	.57	.57	.57	1.13	14.43	2.4	9 14	1 10	
Sulphates (SO ₃) .	.0039	.39	.0039	1.05	nil	. .	. .	. .	. .	. .	0-2	0 4
Phosphates (P ₂ O ₅) .	.0035	.35	.0038	1.03	.10	.10	.10	.93	11.88	66.0	34-50	14 50	
Alkalies, etc. .	. .	. .	.0004	.43	.31	.31	.31	.12	1.53	8.5	26-35	13 21
	1.0003	100.03	.3700	100.00	100.00	91.12	7.83	100.00	18.00	100.0			

* These can only be deducted arbitrarily.

The foregoing analysis and calculations show the original matter in the vessel to have been very heavily contaminated, not only by the intrusion of the surrounding sand, but by water charged with silica, iron, lime, etc., making it impossible to calculate the analysis of the original ash even approximately accurately.

This flow of water also appears to have washed away some of the more readily soluble magnesium and alkaline salts. With the above points taken into consideration, the final calculation, when compared with the standard analysis of the ash of wheat, oats, and barley, suggests the possibility that the contents have been cereal and probably wheat or oats, with oats the more probable.

III.

BEAKER FROM A CIST AT MILL FARM, RATHEN, NEAR FRASERBURGH, ABERDEENSHIRE. AND A CIST CREMATION INTERMENT AT URY, STONEHAVEN, KINCARDINESHIRE. BY PROFESSOR ALEX. LOW, M.A., M.D., F.S.A.Scot.

BEAKER FROM A CIST AT MILL FARM.

This very fine specimen of a beaker or drinking-cup urn was unearthed in May 1934 at the Mill Farm, Rathen, near Fraserburgh, Aberdeenshire. While one of the fields was being prepared for cropping, the cultivator displaced a large flat stone, and on removing this, the farmer's son, Mr Patrick Catto, discovered the beaker. After an interval of some days intimation of the find was sent to Dr W. Douglas Simpson, Librarian, University of Aberdeen, and together we visited the farm. In the meantime what was evidently a stone cist had been covered up. The site of the discovery is on the top of a natural knoll or mound in a field about 800 yards north-west of the farm buildings. The cist was again uncovered, and we saw the flat stones that had formed a cist with internal measurement approximately 24 inches long by fully 12 inches broad and about the same depth: there was no trace of bone. There was some evidence that the cist may have been disturbed at some previous time.

Bearing on this we are indebted to Mr George Dawson, Fingask, Fraserburgh, for the following information. Mr Dawson was for many years tenant of the Mill Farm, as also was his father. He says that about fifty-five years ago, whilst his father was having the "mound"

levelled, a stone cist was opened up and two urns were found: there were no bones but probably "ashes." On the suggestion of the proprietor, the then Lord Saltoun—grandfather of the present peer—the urns were re-interred in the mound. Both urns were said to be chipped, and so it is doubtful whether the beaker now unearthed is one of these urns. In 1914 the Buchan Field Club obtained permission from the late Lord Saltoun to investigate the mound, but owing to the European War this was not undertaken.

The beaker (fig. 1) is a perfect specimen and is formed of a hard reddish-brown ware. Embedded in the clay are small glistening particles of mica. It is very symmetrically made and measures 7 inches in height, 6 inches in diameter at the mouth, $5\frac{2}{5}$ inches at the neck, $6\frac{1}{5}$ inches at the bulge, and $3\frac{1}{2}$ inches across the base; the average thickness of the wall is $\frac{2}{5}$ inch, and the capacity is 67 fluid ounces.

The outer surface is decorated with three zones of impressed linear ornamentation, one round the rim $\frac{2}{5}$ inch broad, another round the neck and shoulder 3 inches broad, and the third round the lower part barely 3 inches broad. The uppermost zone consists of a narrow band of lattice design, the middle zone shows a band of elongated triangles, the triangles being filled in alternately with lattice design and oblique lines; the band of triangles is bordered below by three horizontal straight lines and with four similar lines above; the lowest zone repeats a very similar pattern of ornamentation, but the triangles are inverted with apices pointing towards the base. Further, the inner surface of the everted rim (fig. 2) shows a carefully executed band of ornamentation; the band is $1\frac{1}{5}$ inch broad and consists of radiating lines enclosed above and below by a horizontal double chevron design.

A band of ornamentation on the inside of the rim of the urn is a

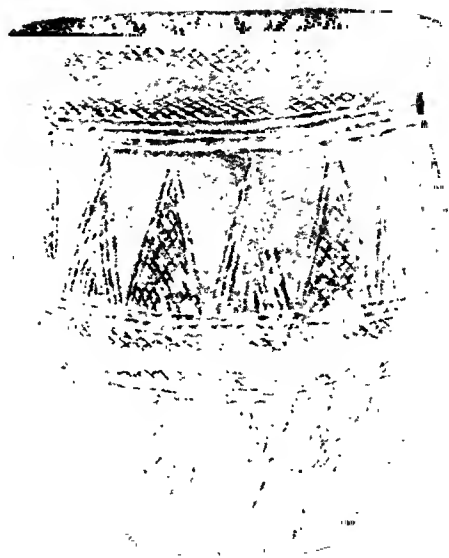


Fig. 1. Beaker from Cist at Mill Farm, Rathen.

rare feature. It is of interest to note that Mr J. Graham Callander ¹ recorded the finding, in a cist at Upper Boyndlie, Tyrie, the neighbouring parish, of an urn with a similar broad band of ornamentation on the inside of the rim.

The impressed patterns on the Rathen beaker are filled in with a white powder-like material which brings out the ornamentation. A sample of this white powder was removed from the impressions and submitted to chemical examination,² and the analysis shows the powder to consist of a large proportion of phosphate, a small amount of calcium, and traces of carbonate. A similar white powder was present in the impressed patterns on a beaker from a stone cist at Johnston, Leslie, Aberdeenshire,³ and chemical analysis showed this powder to consist of a large proportion of phosphate, a small amount of calcium, and traces of carbonate and chloride.



Fig. 2. Beaker from Cist at Mill Farm, Rathen, showing ornamentation on inside of rim.

Mr Peter Catto, the proprietor of Mill Farm, Rathen, has presented the beaker to the University of Aberdeen.

CIST CREMATION AT URY.

On 28th March 1934, while workmen were engaged taking out the foundation for an electric pylon in the West Findlaystone Park, in the policies of Ury House, Stonehaven, they uncovered a small stone cist.

Dr Ogg, Director of the Macaulay Institute for Soil Research, Aberdeen, who was using the opportunity of obtaining samples of soil for investigation, recognised the interest of the find and arranged with the engineer in charge to have the cist left undisturbed till next day.

Dr Ogg and I visited the site next morning, but unfortunately it

¹ *Proc. Soc. Ant. Scot.*, vol. xliii, p. 76.

² For this analysis we are indebted to T. Harold Reade, M.A.(Cantab), M.Sc., Chemistry Department, University of Aberdeen.

³ *Proc. Soc. Ant. Scot.*, vol. lxiv, p. 218.

had been necessary for the workmen to proceed with the excavation and they had carefully removed the cist and its contents—the contents had been placed in a box and the slabs forming the cist arranged against the neighbouring garden wall.

The site of the cist is on a gravelly knoll on steeply rising ground in a field about 300 yards from the Cowie Water.

With the help of the engineer it was possible to obtain a record of the dimensions and structure of the cist. The cover of the cist lay



Fig. 3. Contents of Cist Cremation Interment at Ury: 1. Pieces of flat bones of cranium and of jaws with milk teeth, child 3 to 5 years. 2. Pieces of flat bones of cranium and part of left orbit, adult. 3. Articular ends of lower limb bones. 4. Pieces of shafts of upper limb bones. 5. Bones of hands and feet. 6. Flint implement (imperfect). 7. Charcoal and clay.

about a foot under the surface of the ground and was formed by a relatively large irregular slab of sandstone which measures 4 feet 4 inches in its greatest length; 2 feet 4 inches in breadth; and about 3 inches in thickness. The sides and ends of the cist were made of smaller slabs set on edge—the two side slabs being inserted within the end slabs. One side slab measures 23 inches in length, 13½ inches in depth, and 3 inches in thickness; the other side slab measures 20 inches in length, 15 inches in depth, and 1½ inch in thickness. One end stone measures 23 inches in length, 12 inches in depth, and 2 inches in thickness; the other end stone measures 20 inches in length, 17 inches in depth, and 1½ inch in thickness. All the slabs are of local sandstone.

From the markings on the slabs the internal dimensions of the cist

could be determined fairly accurately—internal length, 20 inches; breadth, 9 inches; depth, 12 inches. Clay had been used to close the joints between the slabs. The floor was not paved or covered by clay.

The small cist contains the bones—for the most part in small pieces—from a burial by cremation (fig. 3). Quite a number of the larger pieces can be recognised as belonging to an adult human skeleton—pieces of flat bones of cranium as well as parts of upper and lower jaws with tooth sockets: pieces of vertebræ: ribs: and numerous pieces of limb bones varying in length from $\frac{1}{2}$ inch to 2 inches. Several of the smaller bones of the hand and foot are also present. The ends of these are all completely ossified (*i.e.*) remains of adult bones. Mixed with the numerous pieces of the adult skeleton are pieces of the flat bones of the cranium and the upper and lower jaws with milk-teeth, indicating a child, perhaps about 3 to 5 years of age.

Thus there is evidence that the cist contained the cremated remains both of an adult and of a young child. The bones show evidence of being very thoroughly cremated.

Among the pieces of cremated bone was found a “worked” flint implement which had been subjected to fire and unfortunately is not complete, the pointed end having been broken off. The implement shows secondary chipping along its margins and measures $1\frac{1}{5}$ inch in length by $\frac{9}{10}$ inch in breadth and $\frac{1}{4}$ inch in thickness.

Mr H. McLaren, Factor for the Ury Estates, was most helpful in providing facility for the examination of the cist and in obtaining the permission of the proprietor, Lord Stouchaven, to have the contents of the cist removed to the Anatomy Department, Aberdeen University, for detailed examination.

IV.

HERALDIC DECORATION ON THE CASTLES OF HUNTLY AND
BALVENIE. BY THOMAS INNES OF LEARNEY, F.S.A.Scot.,
CARRICK PURSUIVANT OF ARMS.

Amongst the outstanding features of Huntly Castle is the effective manner in which heraldry has been applied to the decoration of the structure, so that it is not merely a panel inserted upon the house but part of the architectural *ensemble*, and the result has been extraordinarily



[Photo A. B. Beattie, Huntly.]

Fig. 1. Huntly Castle: view of "Palace" from the south after conservation.

picturesque, and indeed remains so even in its present damaged condition. Approaching the castle from the south we look up to a row of lofty bow windows, knit together by two great bands of lettering, containing the names of the builder and his wife—George Gordon, Marquis of Huntly, and Henriette Stewart, Marquise of Huntly (fig. 1). Design of this nature was not unknown at the period. Hardwick Hall exhibits another instance, but I know of no such stately example as the tall bow

windows crowning the lofty solidity of Huntly's massive palace. The lettering is separated by mullets, which in this situation are somewhat difficult to explain, unless they bear some subtle reference to the family claim to the oft-sought Earldom of Moray. That some heraldic significance is implied is evident from the appearance at the central window, of the fleur-de-lis of Darnley, the charge from the Marchioness's achievement. The dummy window above, however, displays a typical Scottish armorial tympanum with the quartered shield of the Gordons of Huntly: 1st and 3rd, the boars' heads of Gordon; 2nd, three lions' heads for the Lordship of Badenoch; 3rd, three crescents within a tressure for Seton; 4th, three fraises for Fraser. Of the main gateway on the east no decorative traces remain, but from the decoration of the palace block one may infer that this also would be highly decorated, presumably with the arms of Huntly, immediately above the door, and over them the Royal Arms of Scotland, somewhat after the style which is still visible at Tolquhon. Within the courtyard, however, where the causeway leads to the great doorway of the palace, we find in the round staircase tower, which still exists of a height of some 45 feet, a composition which is probably the most splendid heraldic doorway in the British Isles, for achievement after achievement stretches up the side of the tower, connected by delicately moulded panels, so that when all was fresh and emblazoned in colour, and the corbelled turret above was complete, it must have been a truly imposing entrance (fig. 2). First, above the door itself come four small shields upon the over-lintel, charged respectively with (1) the quartered arms of Huntly, (2) the initials of the Marquis and Marchioness, (3) the arms of Lennox, (4) shield with date 1602. Between them are three animals, apparently greyhounds, creatures which have always been the Huntly armorial supporters. One is surprised that the initial and date should have been inscribed upon the two secondary shields, where one might have expected to find the arms of the Marquis's maternal ancestors, Hamilton and Keith. The opportunity for incorporating these does not, however, seem to have struck the builder, and since the Huntly's associations with the Royal Officers of Arms had too frequently been the arrival of "Letters of Treason" and other such executorials, no doubt the Marquis did not seek heraldic assistance in such matters - beyond the actual details of the bearings. The artistic composition is so much the more to the credit of the Marquis.

The long moulded façade of the tower displays four panels, of which the first contains the impaled arms of Huntly and Lennox, being those of the Marquis and his wife, Lady Henriette Stewart. These are



[Photo H.M. Office of Works.
Fig. 2. Huntly Castle: view of Great Door.

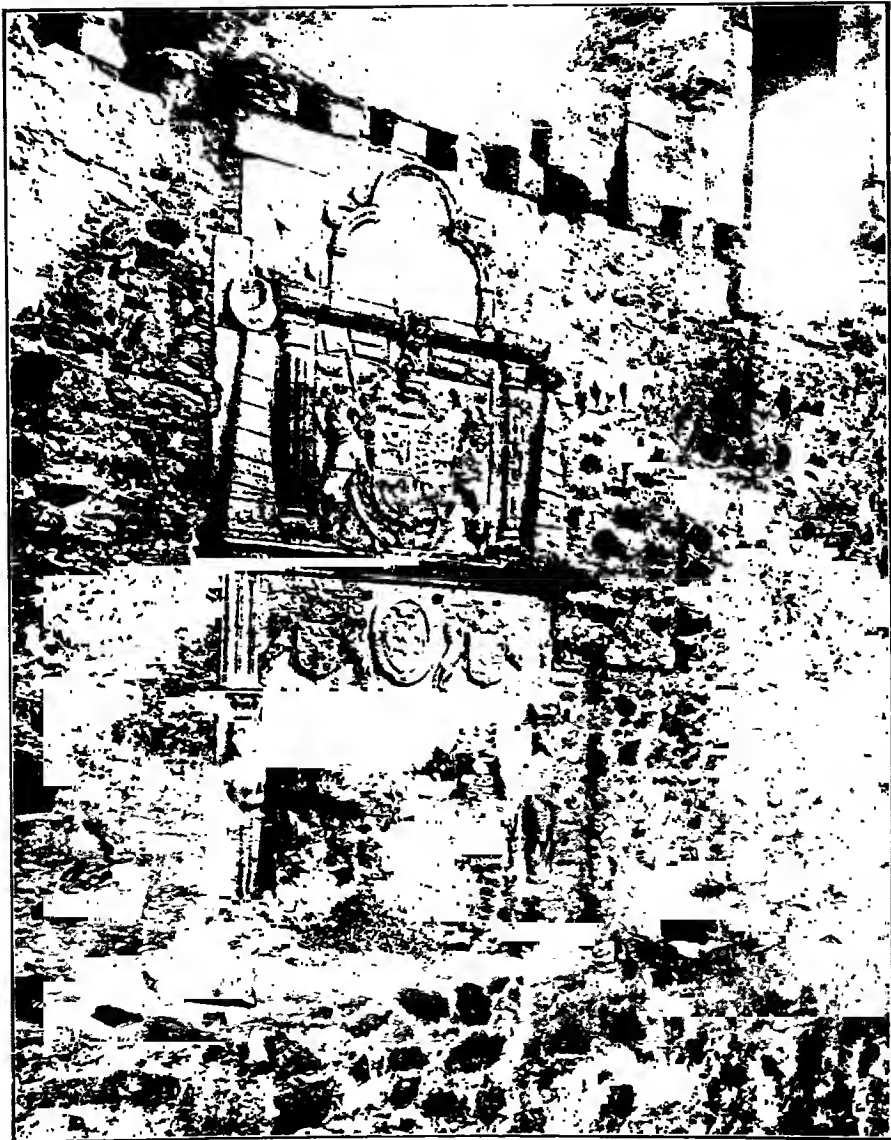
supported by the collared hound of the Gordons upon the dexter, and a somewhat damaged animal, which is presumably the wolf of Lennox, upon the sinister. It is noticeable that both the Gordon and Darnley mottoes are incorporated, and in the intervening space between the 1st and 2nd panel is an open crown in detail more of a Royal nature than the accepted pattern of crest coronet, which—if it appeared in the earlier work—*tempore* Mary Queen of Scots, may not have escaped her adherents when pointing out that Huntly was too magnificent a building for a subject. From the coronet, however, emerges not only the Gordon stag's head but also the bull's head of Lennox, a somewhat incongruous combination: but an exactly similar arrangement is found later on, in the memorial to Udny of that ilk at Newburgh, and the practice of displaying the crest of the wife's family along with one's own seems to have been fairly usual in seventeenth-century Scotland. In the panel above appears the Royal Arms of Scotland, impaled with those of Denmark, being those of James VI. and Anne of Denmark. The arms of the Queen show: quarterly, (1) Denmark, (2) Norway, (3) Sweden, (4) Gothland, and (5) in base, Vandalia. Over all dividing the first four quarterings, the cross of the Dannebrogg and over all an inescutcheon, charged with an escutcheon *en surtout*. The two last are not carved, so the details were presumably painted only. The first should have shown quarterly, (1) Holstein, (2) Stammarn, (3) Ditmarken, (4) Lauenburg, whilst the escutcheon *en surtout* would have borne, per pale, dexter, Oldenburg, sinister Delmanhorst. Supporters on the dexter by the Scottish Unicorn, holding the Royal banner, and on the sinister the wyvern of Denmark, holding a banner charged with a similar wyvern. The badge of St Andrew is pendant beneath the Royal shield: and I would remind you that only eleven years later, in 1613, in Mennevius, *Delicie Equestrum sive Militarium Ordinem*, details are given of what purports to be the rules of the Order of the Thistle, to which Order Bishop Leslie had also referred in 1578, and it is also referred to in a Sinclair pedigree dated 1590, in the Lyon Office. There is thus good reason to believe that the Thistle *as an Order* actually existed at and before this time. Indeed, it appears to have had its rise in the reign of James III., revivals under James IV. and James V., and thereafter to have been kept alive by the badge in the Royal Arms, though no revival as a knightly brotherhood took place until the reign of James VII. It is, indeed, somewhat curious that each of the revivals of the Order appears to have been associated with the banding together of a chivalric brotherhood in defence of the Church of Rome, whose tenets had indeed been introduced into Scotland along with the veneration of St Andrew.

Above this panel appears the Royal Crest of Scotland, the lion sejant upon the crown, whilst on either side appear the initials of King James and his wife: I.R.6. *Jacobus Rex. Sextus.* and A.R.S. *Anne Regina Scotorum.* whilst the Royal motto, IN DEFENS, has been got in by affixing it to a panel across the leaf-embellished moulding of the upper panel, wherein are depicted the emblems of Our Lord's Passion, above which appears the motto: "A B S N *Nobis gloriari nisi in cruce domini nostri Jesu Christe.*" In the moulded panel above this appears a blazing sun within a circle of clouds, along with the motto, *Divina virtute resurgo,*



Fig. 3. Huntly Castle: Arms of the fourth Earl of Huntly and his wife, Elizabeth Keith, on north wall of "Palace."

whilst at the top of mouldings on either side are a lion sejant affronté and a double-headed eagle, presumably representing Scotland and the Holy Roman Empire, or the Norse raven. Surmounting the whole combination is the figure of St Michael; but this and the two sacred panels beneath it have been sadly defaced by the activity of Major Strachan, who in 1650 busied himself in defacing "the popish emblems." On the north wall of the palace is a particularly pleasant achievement of the 4th Earl and his wife, Lady Elizabeth Keith, which is an instructive piece of carving, since it shows the comital achievement adapted to a situation in which horizontal latitude was required, and here we see the fancy shield type of the sixteenth century expanded so as to show both the arms of husband and wife effectively, and above, the old-fashioned Scottish type of Earl's coronet used before the Union (fig. 3). The dexter supporter is the Huntly greyhound; but the sinister, instead of being, as might have been expected at the period, the Keith roebuck, is a somewhat French-looking Cupid with elevated wings. The initials

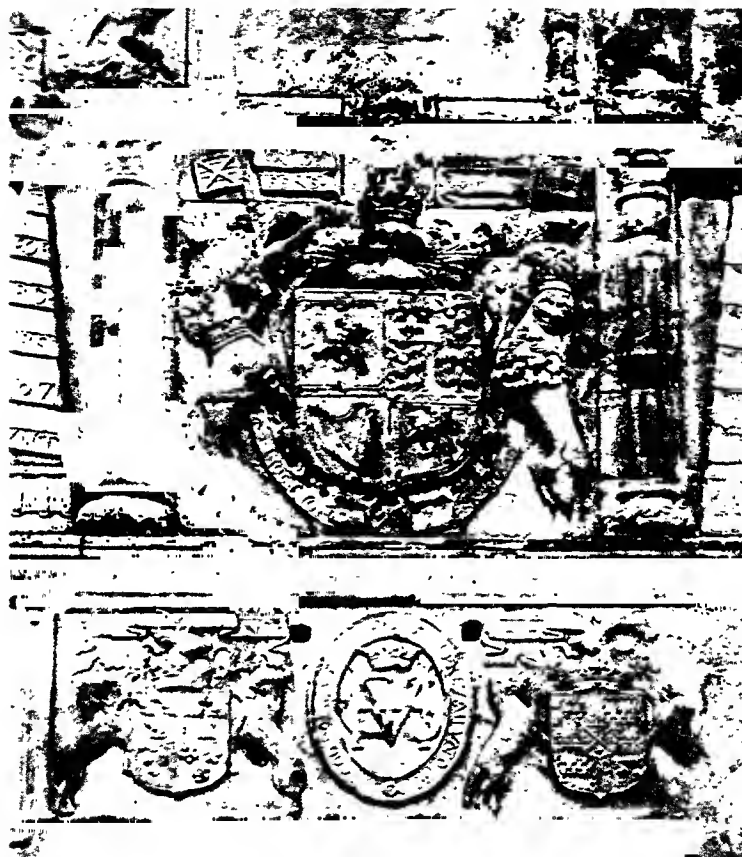


[Photo H.M. Office of Works.]

Fig. 4. Huntly Castle: Great Fireplace.

and arms of this couple—conjoined per fess—along with the date 1553, are also found on the spurstone of the building.

Within, on ascending the staircase to the great hall of the palace, the fireplaces of the hall and great chaumer have been torn out and



[Photo W. Douglas Simpson.

Fig. 5. Huntly Castle: Detail of Great Fireplace.

have disappeared, though a drawing of one of these is extant in the Library at King's College, Old Aberdeen. It shows a lozenge ensigned with coronet and containing a monogram. The lozenge is supported by two savages and the space of the lintel on either side is filled by what appear to be two horses courant. Presumably this was the fireplace of the Marchioness's room. The elaborate ceilings, decorated with tempera paintings and mottoes, also have vanished.¹ In the upper

¹ Shaw, *History of Moray*, vol. ii. p. 410.

chambers there still remain two splendid mantelpieces, one of which is, like the staircase tower, an outstanding example of everything that an armorial fireplace should be (figs. 4 and 5). It bears the date 1606. The jambs on either side are supported by knights in armour, whilst upon the lintel appear the full achievements of Huntly on the dexter and Lennox on the sinister, with between them an oval, inscribed with the motto: SEN GOD DOE VS DEFEND. VE SAL PREVAIL VNT0 YE END,



Fig. 6. Fireplace on second floor of "Palace."

and within it the coronet and cipher of the Marquis and Marchioness. The use of the complete achievements and shields forms a symmetry which would have been impossible if Lady Henrietta's lozenge alone had been displayed. Along the moulding of what we might call the mantelshelf is the inscription: TO THAES THAT LOVE GOD AL THINGIS VIRKS TO THE BEST; whilst the overmantel is supported by two fluted columns, which have been surmounted by carved figures—presumably of a sacred character, since they also have been defaced—between which are displayed the usual large achievement of the Royal Arms, indicating that the castle was the seat of an immediate vassal of the Crown; for as Bartolus, the celebrated legal writer, observes:

"Whilst subjects may not display the arms of their Sovereign, they may do so relatively, by placing them above their own arms in the centre of their wall," as an indication of the feudal relationship of superior and vassal.¹ This is the explanation of what would otherwise appear a lavish display of the Royal Arms upon so many baronial castles in Scotland. On either side, outwith the pillars and completing the design of fluted pilasters above the knightly jambs, are two cones, twisted round with ribbons, bearing the name and title of the Marquis and Marchioness, surmounted respectively by a Seton crescent and by a fleur-de-lis of Aubigny. Above, there is a moulded panel which has evidently contained a sacred device, now either completely weathered

¹ Innes of Learney, *Scots Heraldry*, pp. 124, 161.

away, or, as I suspect, defaced by Major Strachan. In the adjoining chamber there is another interesting but less imposing fireplace, in which the central motive is the impaled achievement of the Marquis and Marchioness, now, however, in a much decayed condition (fig. 6). On either side are the carved busts of a lady and gentleman, whom we may suppose may be intended to represent the builders. On the chamber of the round tower on this floor can still be traced a fragment of a painted achievement of the Huntly arms, and there are traces of others on the sides of other window openings, from which we may deduce that whilst the walls were no doubt hung with tapestry, the window recesses had been elaborately decorated with heraldic achievements painted upon the stucco plastering of the walls.

In the course of the excavations were discovered some other fragments which have, or may have, formed part of armorial bearings—as the fragment of an armorial shield with the Gordon arms undoubtedly does: whilst two griffins, each supporting a shield, must, I think, in some way refer to the period or personage of Elizabeth Gray, widow of the 4th Earl, who married for her second husband the Earl of Rothes, whose supporters were griffins. These are the only heraldic griffins which seem in any way associated with the history of the building.

BALVENIE CASTLE.

At Balvenie¹ we meet with heraldry applied in a very different but none the less effective manner to a building which in a sense is of somewhat similar style, though markedly different in appearance to the palace block of Huntly. We find the same round tower and the row of ornamental windows, though these are of a different and much less pretentious type, consisting of little semicircular bows which must have looked very attractive if glazed with curved leaded panels. Here the heraldry is applied in a row of moulded panels situated above the bow windows and beneath the eaves course which may have been lighted by dormer windows. The central panel displays the Royal Arms of Scotland, surmounted by the open crown and surrounded by a spray of thistles, the whole being evidently copied from the style of heraldic drawing in the time of Lord Lyon Sir Robert Forman of Luthrie, which is indeed confirmed by the next panel, situated above and midway between two of the bay windows, and above a bold scroll with the proud motto: FVIRTH FORTVIN AND FIL THI FATRIS, which, discounting the banal “fill the fetters,” probably did have a *double entendre*,

¹ There are unfortunately no photographs of the Balvenie panels, and from their height such are not easily to be obtained.

meaning either "file thy fetters (off)," or "fill thy fatris," if the last word be read in the meaning "coffer." At any rate the coat-of-arms above, surmounted by its comital coronet, displays the arms of the Stewart Earls of Atholl: Quarterly, 1st and 4th, paly of six Or and Sable, for Atholl; 2nd and 3rd, a fess chequy, for Stewart, along with the initials I.S., standing for John Stewart, 4th Earl of Atholl (1542-79), whose arms, impaled with those of his wife, Lady Elizabeth Gordon, appear in the third panel, situated at the top of the narrow angle staircase turret, this shield being impaled: Dexter, the quarterly coat of Atholl; and sinister, the quarterly coat of Huntly: 1st, the boars' heads of Gordon; 2nd, the lions' heads of Badenoch; 3rd, the crescents of Seton; 4th, the cinquefoils of Fraser. On a lower level, above the arched gateway with its heavy iron yett, and between the two principal windows of the first floor, is another recess, now devoid of any coat-of-arms and surrounded by a cable moulding, but one surmises it may have displayed the achievement and supporters of the house of Atholl.

Within the courtyard on either side rise two circular towers, each with a doorway leading to its turnpike stair, and above each of these doorways is a recess for a coat-of-arms. Both are now empty. When, however, I first went to Balvenie in 1913 the carved shield was still, according to my recollection, in one of these openings, and in 1926 Dr Douglas Simpson noticed in the transe a shield which had apparently come from one of them, in which the first quarter, displaying the six pales of Atholl, was alone distinguishable. McGibbon and Ross, however,¹ state that the shield over the southern door displayed Atholl impaling Forbes, being therefore evidently the achievement of John, 3rd Earl of Atholl, 1522-42. The sketch, however, suggests that it was another shield displaying the arms of the 4th Earl, impaled with Gordon, since neither of the wives of the 3rd Earl, Grizel Rattray or Jean Forbes, would have had a quartered shield. Conceivably, the shield in the transe displayed the arms of Atholl and Forbes, so that the two turrets may have been embellished with the arms of the third and fourth Earls.

There was, however, at Balvenie other and more elaborate heraldry, of which only fragments exist to-day, for amongst those collected in the course of clearing the courtyard are the remains of the muzzle and shoulder of a chained unicorn, as in the Scottish Royal Arms,² and this must have formed part of a large and magnificent carving of a heavily-cut and artistic style, for I have seldom seen a better cut piece of chain

¹ *Castellated and Domestic Architecture of Scotland*, vol. i, p. 387.

² The unicorn being a sinister one, and the post-union achievements always showing the unicorn on the dexter in Scotland, it follows that the fragment is part of an achievement older than 1603.

and tufting. It has all the characteristics of the best heraldic art. Perhaps it surmounted the fireplace, either in the vaulted hall or the north hall adjoining, or it may have been over some doorway leading to the other and now vanished suites of apartments which at one time surrounded the interior of the courtyard.

Both these castles are excellent examples of how armorial bearings have been used as an effective element in architectural decoration, and also in such a manner as to preserve the history of the structure and the identity of the builders of various parts involved.

MONDAY. *8th April* 1935.

SIR GEORGE MACDONALD, K.C.B., LL.D., F.B.A., President,
in the Chair.

A ballot having been taken, the following were elected Fellows:—

Mrs WYNDHAM CHAPLIN, Sesame Club, 49 Grosvenor Street, London, W. 1.
HAROLD HELMAN, "Dil-Kushi," Plomer Hill, High Wycombe, Bucks.
Rev. CHARLES P. ROBERTSON, M.A., "Norwood," 41 Queen Mary Avenue,
Glasgow, S. 2.
GEORGE SOUTER, Drynie, Dingwall.

Miss M. E. Crichton Mitchell, Ph.D., F.S.A.Scot., exhibited photographs of two Bronze Age Beaker urns from Cawdor, Nairn. The urns are at present housed in the Museum of Archaeology and Ethnology, Cambridge, and are labelled 23.1316 and 23.1317 respectively. Both were found in a cist together with the remains of a human skelton. The first (fig. 1. 1) is of type C_A and is decorated by means of a cog-wheel, the lines of ornament having a deliberate white filling which serves to enhance the various patterns. This beaker measures 15 cm. in height, 14.5 cm. across the mouth, 12.8 cm. in diameter at the neck, 13.2 cm. in diameter at the bulge, and 8.4 cm. across the base. The second (fig. 1. 2) is of the C_B variety, and while decorated by means of the same device is much more degenerate in both form and ornamentation. This urn measures 13 cm. in height, 10.5 cm. across the mouth, 10 cm. in diameter

at the neck, 11.1 cm. in diameter at the bulge, and 6.9 cm. across the base.

Single cists containing more than one beaker are rare in Scotland, but seven instances are recorded from Aberdeenshire, two from Fife, and one



Fig. 1. Beakers from a Short Cist at Cawdor, Nairn.

each from Argyll, Caithness, Banffshire, Inverness-shire, and Kincardineshire.

The following Donations to the Museum were intimated and thanks voted to the Donors:—

- (1) Bequeathed by Miss J. A. JOHNSTONE, 11 Newbattle Terrace, Edinburgh.

Covenanters' Flag, carried at the Battle of Bothwell Brig. It is of white linen and measures $5\frac{1}{2}$ feet 2 inches by 4 feet $10\frac{1}{2}$ inches. In each corner is a thistle with two leaves, and in the upper part of the flag the inscription COVENANT · FOR RELIGEON · ACCORDING TO · THE · WORD · OF · GOD CROWN · AND · KINGDOMS all painted in black.

Sword Blade with pommel, but without knuckle guard, measuring 2 feet $11\frac{1}{4}$ inches in total length.

The flag is framed, under glass, and within the frame is the receipt:

EDINBURGH, 4th April 1870.

"Received from Mr Johnstone of 9 Royal Terrace, Edinburgh, the sum of Eleven pounds, as the price of a flag and sword that belonged to Alexr. Clark of Berryknowes, in the parish of Lochrutton, a Covenanter whose descendants have treasured the flag and sword as an heirloom in the family till the present time, and my mother was the last of the Clarks of Berryknowes."

"JAMES SMITH,
Shawhead, Irongray,"

signed across a receipt stamp of the time.

(2) By WALTER G. GRANT, F.S.A.Scot.

Round Stone Ball. $2\frac{1}{2}$ inches diameter, found within the fort at Hill-head, Kirkwall, Orkney.

(3) By JAMES S. RICHARDSON, F.S.A.Scot.

Rim fragment of a vessel of dark hand-made pottery from North Berwick Law, East Lothian.

The following Donations to the Library were intimated and thanks voted to the Donors:—

(1) By S. GORDON WILSON, Master of St Thomas' Hospital, East-bridge, the Author.

With the Pilgrims to Canterbury, and the History of the Hospital of Saint Thomas. London, 1934.

(2) By LA FONDATION SINGER-POLIGNAC, Collège de France, Place Marcellin-Berthelot, Paris.

Les Peintures Rupestres Schématiques de la Péninsule Ibérique.
By L'Abbé Henri Breuil.—IV. Sud-est et Est de l'Espagne.
De Lagny. 1935.

(3) By THE SECRETARY, The Manx Museum.

Journal of the Manx Museum, vol. ii., No. 38, March 1934. Vol. iii., No. 42, March 1935.

(4) By Rev. H. R. CHALMERS, F.S.A.Scot.

Legends of the Highlands of Scotland, from Oral Tradition. By James Grassie. Inverness, 1843.

(5) By Sir GEORGE MACDONALD, K.C.B., LL.D., D.Litt., etc., President.

Iranians and Greeks in South Russia. By M. Rostovtzeff, Hon. D.Litt. Oxford, 1922.

Prehistoric Thessaly. By A. J. B. Wace, M.A., and M. S. Thompson, B.A. Cambridge, 1912.

Scythians and Greeks. By Ellis H. Minns, M.A. Cambridge, 1913.

Proceedings of the Devon Archæological Exploration Society. Title-page and Index to vol. i., and vol. ii., part 1. 1933.

(6) By JOHN FRASER, Corresponding Member.

Edwards' Pocket History of Brechin, and Guide Book. Brechin, 1872.

(7) By Professor Dr ERNST FABRICIUS, Honorary Fellow.

Der Obergermanisch-Ræetische Limes des Roemerreiches. Lieferung II. Berlin and Leipzig, 1935.

(8) By Dr JOHN LINDSAY, M.A., c/o Messrs Lindsay & Co., Ltd., 17 Blackfriars Street.

Publications of the Clan Lindsay Society, vol. iv., No. 15, 1935.

(9) By an ANONYMOUS DONOR.

The Letters of Sir Walter Scott.—VIII. 1823–1825.

(10) By THE CURATOR, Russell-Cotes Art Gallery and Museum, Bournemouth.

Bulletin, vol. xiv., No. 1.

(11) By Mrs E. D. CHAPLIN, the Author.

Matter, Myth and Spirit. London, 1935.

(12) By LADY KING STEWART, Murdostoun, Newmains.

Historical Researches into the Politics, Intercourse and Trade of the Carthaginians, Ethiopians, and Egyptians. By A. H. L. Heeren. Vols. i. and ii. Oxford, 1832.

Archæologia Græca. By John Potter, D.D. New Edition, 2 vols. Edinburgh, 1932.

The History and Antiquities of the Doric Race. By C. O. Müller. 2 vols. Oxford, 1830.

Art Work in Earthenware. By Henry B. Wheatley and Philip H. Delamotte. London, 1882.

The History of the University of Edinburgh. By Alexander Bower. 3 vols. Edinburgh, 1817–30.

A Geographical and Historical Description of Ancient Italy. By Rev. J. A. Cramer, M.A. 2 vols. Oxford, 1826.

A SHORT CIST FOUND AT BRIDGE FARM, MEIKLEOUR. 401

The Romance of Ancient Egypt. By John Gunning Seymer, B.A.
2 vols. London, 1835.

The Nations Around. By A. Keary. London, 1870.

Mallet's Northern Antiquities. London, 1847.

Historic and Monumental Rome. By Charles Isidore Hemans.
London and Edinburgh, 1874.

The following Communications were read:—

I.

A SHORT CIST FOUND AT BRIDGE FARM, NEAR MEIKLEOUR,
PERTHSHIRE. BY JOHN RITCHIE, F.R.A.I. WITH A
DESCRIPTION OF THE SKELETAL REMAINS BY PROFESSOR D.
RUTHERFORD DOW, M.D., F.R.S.E.

On 9th August 1933 Mr Stirling, tenant of Bridge Farm, near Meikleour, informed me that while engaged in taking gravel from a hillock, he had exposed a large flat stone which was about a foot from the surface, and that on lifting the corner of it he observed a few bones.

On 10th August I visited the site, and ascertained that during the interval someone had dislodged the stone and removed from underneath a human skull, parts of a pelvis, and pieces of an urn.

The investigator had replaced the bones, but parts of the urn were left on the ground, and these were found by Miss Stirling who gave them to me.

There was evidence that a spade had been pushed into the underlying sand and gravel, but inquiry revealed that no further damage had been done.

Cist and Contents.—A view of the cist after removal of the cover stone is shown (fig. 1). It was situated near the summit of a mound composed of river gravel (x—fig. 2). On the east lay the River Isla, and on the west a tree-covered mound, part of which is seen in the photograph (fig. 2). At Birkhill, not far distant from this site, there is a similar configuration of the ground which was excavated by Lord Abercromby, who found skeletal remains in it.¹

The sides and roof of the cist were formed by slabs of stone of varying

¹ *Proc. Soc. Ant. Scot.*, vol. xxxviii, p. 82.

thickness taken from the Lower Old Red Sandstone Series. That on the west was too short to meet the one on the north side, and flat pieces of

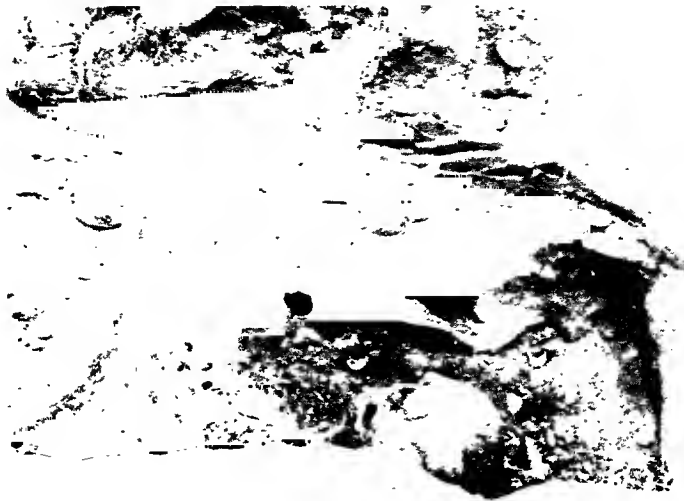


Fig. 1. View of Cist.

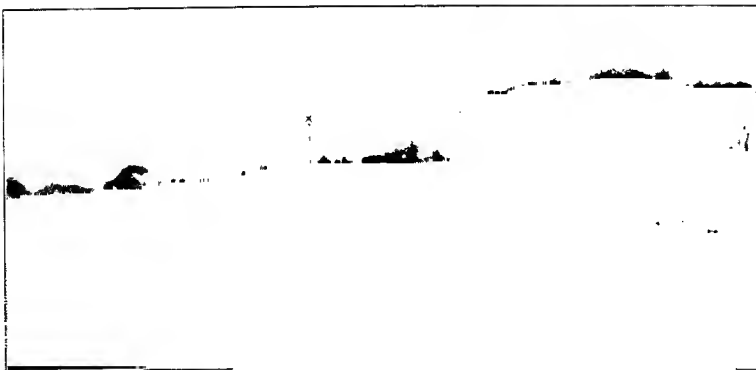


Fig. 2. View of Mound containing Cist.

gravel had been packed in to fill the gap in the corner. There was no slab on the bottom of the cist, only a smooth bed of river gravel.

The measurements taken from the interior of the cist were as follows: -

North side, 3 feet 7 inches: south side, 3 feet 3 inches: east end, 1 foot 8 inches: west end, 2 feet. Approximately two-thirds of the interior of the cist was filled with sand and gravel which had evidently

filtered into it during a very long period. On the surface of this gravel there lay exposed a skull, parts of a scapula, pelvis, femur, and vertebrae (fig. 1). On removing the gravel other bones were found in a soft and badly preserved state. They were carefully removed by hand and dried by the sun and wind.

As few skeletal remains have been described from Perthshire, a hydrogen-ion test of the soil in and around the cist where the skeleton lay was made. This showed the soil to be 6.9 or almost neutral.

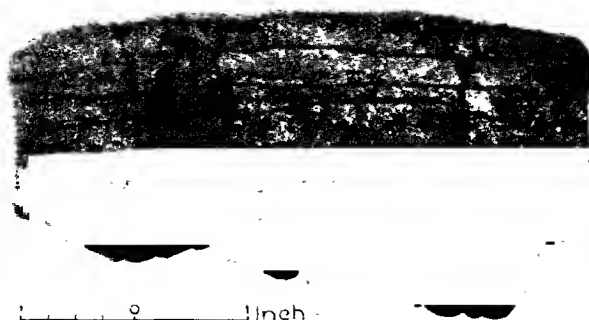


Fig. 3. Fragment of Cinerary Urn.

A piece of grey flint of triangular section, measuring 22 mm. long and 11 mm. broad, was found lying close to the rib bones. It showed slight working along the edges, as if it had been a saw.¹ There was no evidence of any mineral substances among the gravel.

Pieces of a small cinerary urn with simple line markings were found buried in the south-east corner of the cist. Three large parts of it which lay exposed were light in colour on the outside, and black on the inner surface (fig. 3). Several small portions of the urn were found in the detritus right down to the floor of the cist. Some of these pieces were much decayed and of a brick-red colour on the outer surface. On re-joining these fragments it appeared that the rim was not a true circle. The diameter of the mouth had measured approximately 6 inches. The markings were in the form of incised horizontal lines separated by a single zigzag pattern. An urn described by Sir William Turner,² and several others, 10 to 18 inches in height, found in a cemetery at Kirkpark, Musselburgh, and described by Anderson,³ bore similar markings.

¹ Boyd Dawkins, *Early Man in Great Britain*, p. 358.

² "The Craniology of the People of Scotland," *Trans. Royal Soc. Edin.*, vol. li, p. 195, fig. 8.

³ *Proc. Soc. Ant. Scot.*, vol. xxviii, pp. 62-78.

The clay of the urn was intermixed with large crystals which gave it a rough appearance. In order to ascertain if these were obtained from local rocks Mr Chas. F. Davidson, B.Sc., examined small pieces of the vessel. Adopting the method described by A. Holmes,¹ the pottery was cooked in canada balsam and thin sections cut and examined. Another method adopted was to crush small fragments in a mortar and after washing to get rid of the clay, the coarser grains were mounted in canada balsam and examined under the microscope. It was found that there was no trace of alumino-silicates, either as mullite or sillimanite. Innumerable particles of dolerite from 2 to 4 mm. in diameter were mixed with the clay of the urn. They were of the non-ophitic tholeiitic type, similar to the dykes exposed to-day near Blairgowrie and in other parts of Perthshire, and were as fresh as the rocks which are now being quarried. The augite showed no trace of decomposition and the felspar exhibited Karlsband and albite twinning.

The variations in the colour of the colloidal clay material might be attributed to slight differences in the degree of firing. Mr Davidson was of the opinion that these rock particles were probably obtained from one of the river terraces, and had been added to the clay to prevent shrinkage in the process of baking the urn. In much the same manner to-day, in the Carse of Gowrie, ashes are added to the excavated clays in the process of making bricks and tiles.

My thanks are due to the proprietor of Meikleour Estates and to the factor, Mr John Renton, for granting permission to examine the site.

REPORT ON THE SKELETON.

BY PROFESSOR D. RUTHERFORD DOW, M.D., F.R.S.E.

Examination of the skeleton afforded information of considerable interest of the individual interred. The skull and mandible were in a very good state of preservation, while the bones of the limbs and trunk were complete only in parts. There were no indications of ante-mortem injury or disease. The skull was characteristically of the round-headed type, with all the other features of form and proportions which characterised the short-cist people of adjacent counties, viz. those in Aberdeenshire described by Reid² and Low,³ and in Fifeshire by

¹ *Petrographic Methods and Calculations*, 1927.

² R. W. Reid, *Illustrated Catalogue of Specimens from Prehistoric Interments found in North-East Scotland, preserved in Anthropological Museum, Aberdeen*, 1924.

³ A. Low, *Proc. Soc. Ant. Scot.*, 1929, etc.; *Proc. Anat. and Anthropol. Soc., Aber. Univ.*, 1906.

Waterston.¹ The teeth were exceptionally well preserved, and only two showed slight evidence of caries. In number they were complete, except the left lateral upper incisor which had been extracted during the life of the individual, possibly as a remnant of a rite or custom. Elliot Smith² has described somewhat similar dental mutilations affecting the incisor teeth in negroes from ancient burials in Nubia, and Jackson³ and Wilson⁴ have directed attention to the dental mutilation affecting upper and lower jaws from British prehistoric remains. At the present day, one or more incisor teeth are removed when the operation of sub-incision is performed among aboriginal Australians.

The thigh bones differed from those of modern man in their graceful curves, and like the tibia and fibula presented features which suggested that the individual had adopted a squatting posture.

The bones of the lower extremity were poorly developed, and had faint markings, in marked contrast with the muscular impressions on many of the upper limb bones.

This evidence of control by muscles which were well developed, suggested that the upper extremities were used to a considerable extent for manual work, such as the milling of raw food.

The skeleton proved to have been that of a female of between thirty-five and forty years of age, and of a calculated stature of 5 feet 4 inches (Manouvrier) and 5 feet 3 $\frac{3}{8}$ inches (Pearson).

DETAILED EXAMINATION OF THE SKELETON.

The Skull was complete and well preserved, except for two deficiencies in the squamous part of the occipital bone, close to the foramen magnum. The distal third of the right nasal bone, and a small part of the left one were missing. The external surface of the skull felt smooth when examined by the hand, the compact bone was studded over with minute holes, and the anterior part of the frontal was eroded exposing the diploe. Muscular impressions were not well marked. In form the skull was short and round, the face rather small, the orbits low and wide, and the nasal aperture short and wide.

In regard to age one can state that there was very little obliteration of sutures, no indication of senile changes in the jaws, and from a general survey of its characteristics and an examination of the teeth that it belonged to a female of approximately the age mentioned.

¹ D. Waterston, *Proc. Soc. Ant. Scot.*, 1932-33 and 1926-27.

² Smith Elliot, *Arch. Survey, Nubia*, Bull. No. 5, 1910.

³ Jackson, *Journ. Anat.*, vol. xlix, 1915.

⁴ Wilson, mentioned by Jackson, *op. cit.*

The general form of the skull in its different parts presented the following features:—

Norma Verticalis (fig. 4).—When viewed from above the cranium was



Fig. 4. Meikleour Cist Skull (*Norma verticalis*).



Fig. 5. Meikleour Cist Skull with Mandible
(*Norma lateralis*).

broadly oval, its maximum width being below and slightly anterior to the parietal eminences which were distinct. The length-breadth index was 82.6.

Norma Occipitalis.—Viewed from behind the skull appeared to be decidedly broad when compared with its height. The lateral margins were almost vertical and nearly straight.

Norma Lateralis (fig. 5).—In profile the vault appeared relatively low. The frontal bone passed upwards and backwards, the vertex was very slightly convex, the post-parietal part flattened, and the posterior curve was not unduly sharp. The temporal fossa was not large, and the mastoid process small and somewhat pointed. The pterygion was H-shaped, and the external auditory meatus was elliptical.

Norma Facialis (fig. 6).—The face was distinctly wide and short in height. The alveolar arch made a wide curve indicating a very broad palate. The orbits were wide, and the zygomatic bones prominent.

The supra orbital margins were distinct, and on the left side there was a supra-orbital foramen. The anterior nasal aperture was some-

what broad, with only a slight amount of backward inclination. The nasal septum was deflected. The forehead was narrow. The glabella and superciliary arches had disappeared as the result of erosion.

Norma Basalis (fig. 7).—The hard palate and alveolar arch were well developed. There was no premaxillary bone present. The palate was markedly flattened and broad, and presented ridges and grooves on it.

The occipital condyles were elliptical and prominent, and the foramen magnum was circular in its posterior three-fourths, the anterior part of it being more convex forwards. Gnathic index 96·8.

Measurements of the Skull.—Using No. 8 shot, the capacity of the skull was 1390 c.c. Detailed measurements and indices are given in Table I.

Sutures.—The sagittal suture was open on the external surface, except for a short patch 25 mm. long and situated 30 mm. in front of the lambda, in which part the suture was obliterated (fig. 4).

The frontal suture had disappeared, except between the region of the glabella and nasion where there was an indication of its presence.

The lambdoidal suture was well marked on both sides. A large Wormian bone was present in the right one a short distance above the asterion, while several smaller ones were present in the suture on the left side.

The coronal suture was distinct throughout its whole extent.

The squamo-parietal suture stood out very prominently, the squamous part of the temporal having become released from the parietal, and on both sides there was persistence of the original squamo-mastoid suture (fig. 5).

Examination of the interior of the skull revealed that the sagittal suture was obliterated, while the coronal and lambdoidal were still distinct.



Fig. 6. Meikleour Cist Skull with Mandible
(*Norma facialis*).

As the bones of the skull were completely articulated it was not possible to measure the thickness of the component parts of its wall, but the squamous part of the occipital was not more than 1 mm. in thickness.

The left occipital fossa was deeper than the right one as the result



Fig. 7. Meiklesour Cist Skull (*Norma basalis*).

of greater development of the left occipital lobe of the cerebrum. The individual had presumably been right-handed.

The Teeth of the Upper Jaws (fig. 8).—These were all present except the left lateral incisor, whose alveolar socket was completely filled with bone, suggestive that the missing tooth had been removed during the early life of the individual.

The condition of the teeth was good, and there was only slight caries in the second right molar, and to a less degree in the third right molar.

The crowns of all of the teeth were very much worn except in the case of the left canine and left first premolar.

The masticating surfaces of the incisors, right canine, and first right premolar were flattened, while those of the second premolars and first two molars were worn obliquely, especially on the lingual side.

The crowns of the first molar teeth showed the greatest degree of wear.

In most of the teeth there had been exposure of the pulp cavity which was filled with secondary dentine.

The third molars were much the smallest of the molar teeth.

Measurements of Molar Maxillary Teeth.—*Right Side:* 1st molar, breadth (side to side) 11 mm., length (ant.-post.) 9.5 mm.; 2nd molar, breadth 10.5 mm., length 9 mm.; 3rd molar, breadth 9.5 mm., length



Fig. 8. Meikleour Cist Maxillae, showing the wear on the crowns of the teeth.

8.7 mm. *Left Side:* 1st molar, breadth 11.3 mm., length 10 mm.; 2nd molar, breadth 11 mm., length 9.7 mm.; 3rd molar, breadth 10 mm., length 9 mm.

Mandible.—This bone was complete, and in appearance conformed to a modern type. The body was thickened on the medial aspect above the mylohyoid line, and formed a strong support for the molar teeth. This feature was more marked than in a modern mandible. The chin was protuberant, the angles were not everted, slightly obtuse, and the genial tubercles were prominent.

Mandibular Teeth.—These were complete in number. The central and lateral incisors were small and their cutting edges flattened, while the left canine, which was unopposed by a tooth in the upper jaw (fig. 6), projected above the surface contour of all the others, and its edge and that of the adjacent first premolar were not worn. As in the case of the maxillary teeth, the surfaces of the first and second molar teeth were worn obliquely, and this was greatest on the lateral side. The first

molar tooth was most affected in this way, while the third molar was the smallest of the molar teeth (fig. 9).

Measurements of the Mandibular Molar Teeth.—*Right side*: 1st molar, breadth 10 mm., length 9.5 mm.; 2nd molar, breadth 9 mm., length 9.5 mm.; 3rd molar, breadth 8.5 mm., length 9 mm. *Left side*: 1st molar, breadth 9.5 mm., length 9.5 mm.; 2nd molar, breadth 9 mm., length 9.8 mm.; 3rd molar, breadth 8 mm., length 8.5 mm.

The incisor teeth of both jaws had therefore met "edge to edge."



Fig. 9. Meikleour Cist Mandible, showing the wear on the crowns of the teeth.

while the obliquity of the surfaces of the molar teeth (like a set of inclined planes mutually adapted to one another) showed that the movement had been one of protraction and retraction of the mandible and not a "side to side one," for had this been so these surfaces would have worn flat. It is interesting to note that the wear and tear of the front and back teeth in this specimen corresponded to that described by Cameron¹ in Mediterranean and British Neolithic Man and in Minorcan Copper Age Man.

BONES OF THE TRUNK AND LIMBS.

The Vertebral Column: The Cervical Vertebrae.—As is frequently the case, these vertebrae were in a better state of preservation than the dorsal or lumbar.

The atlas was complete except for the left transverse process. The lateral masses and arches were strong, and the groove for the vertebral artery on the right side was converted into a foramen.

¹ J. Cameron. *The Skeleton of Brit. Neolithic Man.*

The axis was also complete, and the depression on it indicated strong neck muscles. The dens was not increased in its antero-posterior diameter. Its superior articular surfaces were larger, but not more convex than in modern bones.

C3 to C7.—These bones were partly broken and presented no features of special interest.

Dorsal Vertebrae.—These were 12 in number, their bodies were much eroded, but their vertebral arches had resisted decay and were complete.

Lumbar Vertebrae.—Only four were found, and these were broken and eroded. The measurements of their bodies were as follows:—

Third lumbar. Ant. vert. diam., 25 mm., post. vert. diam., 26 mm.

Fourth lumbar. Ant. vert. diam., 26 mm., post. vert. diam., 29 mm.

These measurements suggested a slight degree of lumbar curvature as the vertical depth of the bodies was greater posteriorly than anteriorly. A similar observation was recorded by Low.¹

Sacrum.—Except for the 5th vertebra this bone was complete. It presented no abnormal features. The upper part of the ventral surface was flattened and the auricular surface corresponded to $2\frac{1}{2}$ sacral vertebrae. Although its characteristics were not pronounced, it suggested a female type.

Measurements.—Anterior straight breadth, 115 mm.: mid straight breadth (lower marg. aur. surf.), 88 mm.: lower breadth, 63 mm.

Coccyx.—Only the first piece of this bone was found. Its cornua were prominent and transverse processes present.

Ribs and Sternum.—The manubrium sterni was broken along the right border, otherwise it presented no abnormal features. It measured vertically 45 mm. and transversely at its broadest part 53 mm. The right and left first ribs were complete except at their anterior ends. On the left one muscular impressions were well marked. The other ribs were fragmentary.

Clavicles.—These bones were complete, except the acromial end of the left which was broken off. Both were lightly built, the right one being the heavier bone. Muscular impressions on the left one were ill defined.

Scapulae.—The right scapula was broken in several places, but its outline was discernible. The spine was complete and well developed, and the part of the acromion process which was present was much broader than in a modern bone measuring vertically 33 mm. This feature suggested powerful development of the shoulder muscles. There was no retroversion of the glenoid fossa. Only part of the left scapula was

¹ A. Low, *Proc. Soc. Ant. Scot.*, 1929, etc.; *Proc. Anat. and Anthropol. Soc., Aber. Univ.*, 1906.

available and this included the coracoid process and glenoid fossa which were complete, and presented no abnormal features.

Humeri.—The shafts only were present. They were complete, comparatively light, but with well-marked muscular impressions. There was no bowing.

Radius and Ulna.—The upper extremities with the proximal parts of the shafts of the ulnæ were complete. The radial notch of the left one presented a greater vertical height than the right one. Muscular impressions were well marked. The left radius was complete except that its shaft was fractured. Only part of the shaft of the right radius was present. These bones presented no abnormal features.

Carpus.—The following were found: Right navicular, lunate, and os capitate. Left navicular, lunate, hamate, os capitate, mult majus, mult minus.

Metacarpus.—The five left metacarpals which were found measured: the first, 44.5 mm.; the second, 65.5 mm.; the third, 65 mm.; the fourth, 57 mm.; the fifth, 53 mm. They were rather short and slender bones.

Fragments of right metacarpals and several phalanges were found, but they showed no features of special importance.

The Os Coxe.—In both of these bones the ilia and ischia were partly destroyed, and the pubic portions absent.

The iliac fossæ were shallow. The acetabula looked laterally and distinctly forwards, and the sciatic notches were wide, distinctly of a female type. A preauricular sulcus was clearly defined on both bones.

When they were articulated with the sacrum the appearance and measurements suggested that the pelvis had been small.

Femora: *The right femur* (fig. 10) was complete and well preserved, except for slight erosion of the head, tip of the great trochanter, and medial condyle. The neck of the bone was short and the angle which it made with the shaft was 120 degrees.

The great trochanter did not project more laterally than in an average modern man. The oblique ridge on its lateral surface was not well marked, but there was a distinct impression for the attachment of the gluteus minimus. The tubercle and upper part of the anterior intertrochanteric line were not prominent, and the lesser trochanter did not project more from the general surface than in modern female femora.

The upper third of the shaft was hyperplatymeric, being markedly flattened with a lateral convexity so that part of the surface which should have been anterior was directed laterally.

Cameron in his examination of the Colclum femora and the Anglo-Saxon femora from Guildown stated that platymerism is usually associated

with a small cervical angle, and this specimen bears out his assertion. There was no bowing of the shaft, and the linea aspera was not prominent.

The popliteal surface presented no unusual features, the lateral supra condylar ridge was not prominent, and the adductor tubercle only moderately well developed. The trochlear surface for the patella was not definitely deeper than in modern man, and its lateral margin did not encroach on the lateral condyle.

Viewing the lower end from behind, the articular surface of the medial condyle was prolonged towards the posterior surface of the shaft at the side of the intercondylic notch, which was not deeper than in modern man.

Using the length of the femur as a guide to stature, Manouvrier's tables showed that a femur length of 450 mm. corresponded to a stature of 161 cm.

The left femur was incomplete, only the head, neck, lesser trochanter, and upper three-fourths of the shaft were present. The gluteal ridge was slightly more prominent than on the right side, and the shaft hyperplatymetric. The linea aspera was not prominent.

The right tibia was found in three parts, viz. (a) the upper extremity and proximal half of the shaft, (b) three inches of the shaft, (c) the lower extremity.

There was slight retroversion of the upper end of the bone.

The antero-posterior length of the medial condyle was greater than the lateral, but the difference did not appear to be greater than in modern bones.

The posterior border of the lateral condylar surface was more turned down than on the medial side. The anterior tubercle was not specially prominent, and there was no platycnemia.

The medial aspect of the medial malleolus was eroded, and the articular surface of the distal end of the bone was not more concave than in modern bones. There was a slight squatting facet on the anterior aspect of the lower end of the shaft.

The left tibia was incomplete, only part of the upper extremity and shaft being present.

The Right Talus.—This bone was small in size, and complete, but eroded in parts. There was no increase of the convexity of the superior articular surface as noted in many prehistoric specimens, nor was there marked inversion of the head. There was no marked prolongation forwards of the articular surface for the medial malleolus. On the



Fig. 10. Meikleour Cist
Right Femur,
showing
platymeria.

lateral part of the upper surface of the neck there was a smooth articular area suggestive of a squatting facet.

The Right Calcaneus.—This bone was slightly shorter than the average modern one. The posterior facet on its upper surface for articulation with the talus was slightly more convex than usual, and the facet on the upper surface of the sustentaculum had fused with the facet more anteriorly, giving an elongated facet for articulation with the under aspect of the talus.

The articular surface for the cuboid was more deeply concave than usual.

The tubercles on the under surface of the bone were worn and partly eroded.

Of the remaining bones of the foot, the right navicular and right first cuneiform, right and left first metatarsals were found. On the heads of the latter the grooves for the sesamoid bones were deeply marked. The remaining metatarsals and phalanges were fragmentary.

The Right Fibula.—This bone was found in five pieces and there was no trace of the left one. The fibula is a bone which is frequently comminuted in prehistoric burials.

The *right patella* was a small bone. The vertical ridge on its posterior surface was not more prominent than in a modern one. It presented no features of special importance.

TABLE I.

Measurements in mm. of Skull.			
Sex	Female	Orbital breadth, R. . .	38 mm.
Cubic capacity . . .	1390 c.c.	„ „ L. . .	38 mm.
Glabello-occipital length . .	179 mm.	Maxillo-alveolar length . .	52 mm.
Ophryo-occipital length . .	176 mm.	Maxillo-alveolar breadth . .	61 mm.
Nasio-inional length . . .	167 mm.	Sagittal arc, 1	120 mm.
Minimum frontal breadth . .	90 mm.	„ „ 2	124 mm.
Maximum frontal breadth . .	108 mm.	„ „ 3	115 mm.
Squamous breadth	148 mm.	—	359 mm.
Parietal breadth	145 mm.	Length Foramen Magnum . .	38 mm.
Basi-bregmatic height . . .	132 mm.	Transverse arc	300 mm.
Basi-nasal length	96 mm.	Circumference	519 mm.
Basi-alveolar length	93 mm.	Palatal length	43 mm.
Nasi-alveolar height	57 mm.	Palatal breadth	39 mm.
Nasi-mental height	100 mm.		
Zygo-maxillary breadth . . .	96 mm.		
Bizygomatic breadth	135 mm.		
Nasal height	43 mm.		
Nasal breadth	24 mm.		
Orbital height, R.	30 mm.		
„ „ L.	28.5 mm.		
		<i>Indices.</i>	
		Length-breadth	82.6
		Length-height	73.7
		Gnathic	96.8
		Upper facial	42.2

<i>Indices—contd.</i>		<i>Mandible.</i>	
Total facial	73.3	Condyllo-symph length . .	96
Nasal	55.8	Height at symphysis . . .	28.5
Orbital. R.	78.9	Height at second molar . .	27.5
" L.	75	Height: coronoid	57
Maxillo-alveolar	112.8	Height: condyle	64
Palatal index	90.6	Bicondylar width	114
		Bigonial width	88

TABLE II.

Measurements in mm. of Bones of the Extremities.					
Pelvis:	R.	L.	Humerus:	R.	L.
Trans. diam.	128 mm.	—	Circumference diaph.		
Oblique diam.	120 mm.	—	upper third	71	70
Os coxæ. Acetabulum—			Least circumference		
Vertical	61	59	diaph.	64	63
Transverse	52	53	Ulna:		
Femur:			Maximum breadth		
Maximum length . . .	458	—	olecranon	22	22
Oblique length . . .	450	—	Height of olecranon . .	28	27
Upper third of shaft—			Thickness of olecra-		
Ant. post. diam. .	22.5	24	non	—	23
Upper trans. diam.	34	33	Shaft upper third—		
Platymetric index . .	66.1	72	Dorso-ventral . .	—	16
Middle third shaft—			Transverse	—	15
Ant. post. diam. .	26	26	Radius:		
Trans. diam. . . .	26	26	Circumference, neck .	—	48
Pilastric index . . .	100	100	Circumference, below		
Cervical angle . . .	120		tuberosity	—	45
Tibia:			Scapula:		
Ant. post. diam. (level			Maximum length . . .	136.5	—
nutr. for.)	33.5	31	Maximum breadth . .	100	—
Trans. diam. (level			Spinal axis	96	—
nutr. for.)	26	24	Length supra-spinous		
Platynemic index . .	77.3	77.4	line	53	—
Talus:			Length infra-spinous		
Length	51	—	line	92	—
Breadth	40	—	Transverse diam.		
Calcaneus:			glenoid	26	25
Length (maximum) . .	69	—	Length axillary border	121	—
Breadth (at sustenta-			Vertical diam. glenoid	—	35
culum)	39	—			
Breadth (least) . . .	24	—	<i>Indices.</i>		
Patella:			Scapular index	73.2	—
Height	40	—	Supra spinous	38.8	—
Breadth	40.5	—	Infra-spinous	67.3	—
Thickness	19	—	Axillary	88.5	—
Clavicle	140	143	Glenoid	—	71.4

II.

SCULPTURED ROCK: HOLY-WATER STOUP: AND SARCOPHAGUS AT LUSS. BY A. D. LACAILE, F.S.A. SCOT.

SCULPTURED ROCK NEAR SHEGARTAN.

In June 1934, while working in Luss Kirkyard upon a monument described later in this communication, I had recourse to the assistance of Mr William Robb, mason on the Colquhoun estates, who told me of a rock



Fig. 1. Sculptured Rock near Shegartan Farm. From the north-east.

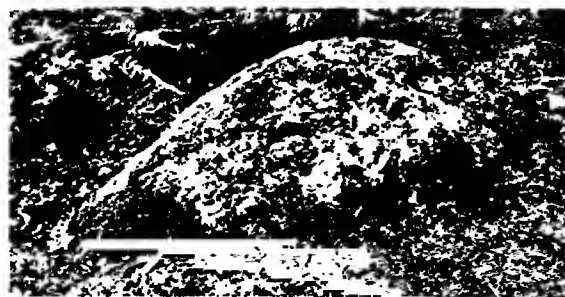


Fig. 2. Sculptured Rock near Shegartan Farm. From the south.

in Glenfiulas near Luss, whose surface, he believed, bore carvings. Under Mr Robb's conduct I visited the place, and found there an outcrop of schist, roughly dome-shaped, with veins and nodules of quartz, measuring 7 feet from north to south and the same dimension from east to west, rising to a maximum height of 18 inches. The rock is situated approximately on the 150-ft. contour inside a wood some 30 yards from the

north-west corner of the dyke bounding the plantation on the west and north, $\frac{1}{4}$ mile south of Shegartan Farm and 3 furlongs north-west of Rossdhu mid-lodge (figs. 1 and 2).

At first sight the sculpturings appeared to consist only of a deep and slightly weathered cup-shaped hollow, 4 inches in diameter, cut in the

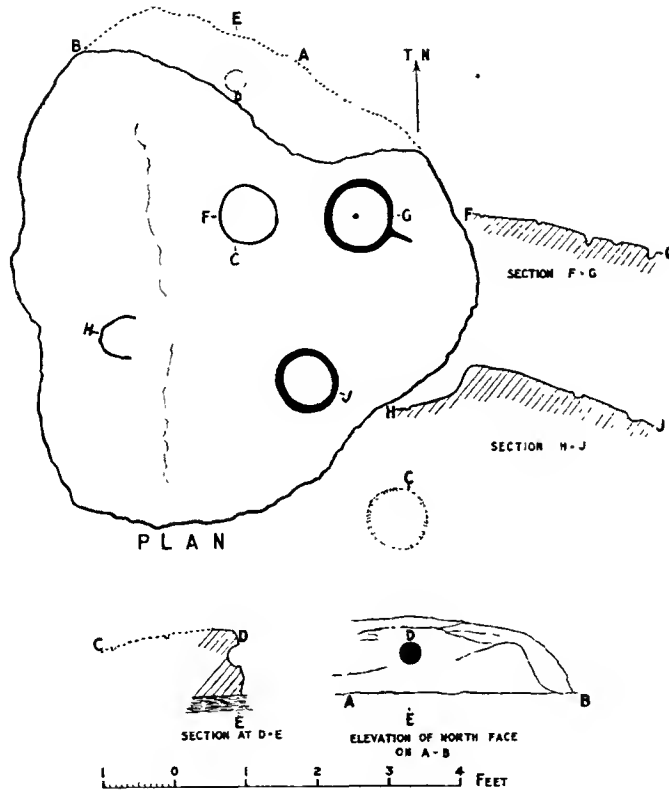


Fig. 3. Sculptured Rock near Shegartan Farm: Key.

north perpendicular face, here 11 inches high, and on the sloping surface to the east a small but deep circular cavity surrounded by a very deeply incised ring from which issues a shallow duct on the east. As other markings seemed to exist, the heavy growth of moss and lichen was removed later, when a curious assemblage was revealed. Altogether this comprises the cup and ring mentioned, one large, shallow and wide ring on the sloping surface to the south, a narrower ring close to the northern edge above the cup, and a narrowly incised sculpturing resembling the outline of a horse-shoe.

The natural irregularities and sloping surface of the rock have been the occasion of injury to the carvings by the facilities afforded rain-water through the centuries. There is a possibility that the very deeply cut-out ring owes its present condition to the unfinished labour of someone, who, long ago, attacked the sculptured work with a chisel, for some purpose which cannot now be determined. Nothing indicates with certainty that the hollow in the middle of this large ring is older than the late chiselling expended upon the surrounding circular figure. Fortunately the projecting duct is unimpaired save for the wear of age and weather.

In the illustration (fig. 3) the line drawing, reproduced from a rubbing, shows the disposition of the sculpturings.

Compared with other groups of Scottish rock-markings assignable to prehistoric times, the Luss assemblage is remarkable by the paucity of cup-like hollows, which elsewhere usually predominate.

HOLY-WATER STOUP FOUND IN GLENFRUIN.

Thanks also to Mr Robb I am able to record an ecclesiastical antiquity from Loch Lomondside. Mr William Nimmo, William Robb's predecessor, residing at Polnaberoch, Luss, had in his possession what my informer described as a stone vessel, which was found by Nimmo twenty-five years ago near Highfields, Glenfruin, $2\frac{1}{2}$ miles west of Arden. It lay among a heap of stones which had been brought down the glen to serve as material for dyke-building upon which he was engaged.



Fig. 4. Holy-Water Stoup from Glenfruin.

This relic proves to be a small, extremely well-executed holy-water stoup, octagonal in plan at the top, of grey sandstone now weathered and injured. It is of the well-known type intended to be placed in a church near the entrance, and probably housed in a small niche. The edges and the base have suffered most, but despite damage the characteristics of the vessel survive. Beneath the vertical edges the stoup is circular, tapering downward to the now missing base, and mouldings ornament the body (fig. 4).

In height the stoup stands $3\frac{1}{8}$ inches, but the base is missing. This was probably low and straight-sided, matching the top in outline although

of smaller dimensions. Each of the eight sides is $3\frac{1}{4}$ inches long and $\frac{5}{8}$ inch high. The full width across the stoup is $5\frac{1}{2}$ inches, and the cavity practised in the stone is parabolic and $1\frac{7}{8}$ inch deep and $3\frac{3}{4}$ inches wide, giving a wall thickness of $\frac{7}{8}$ inch maintained downward.

It may be that this stoup was gathered up with stones from the neighbourhood of the site of St Bride's Chapel at Glenfruin Schoolhouse, near Kilbride, a little over a mile to the west of Highfields. In describing cross-slabs from Glenfruin to our Society I referred to St Bride's, supposed to have occupied the site of a large round cairn.¹ All trace of a structure here has been obliterated: still, I was told that within living memory the outline of some building was discernible near the schoolhouse. In view of the circumstances of finding it is difficult to conjecture from what other place the stoup could have come, for, although there are other ecclesiastical sites in the district, none but St Bride's in Glenfruin is within anything like easy distance of Highfields.

SARCOPHAGUS IN LUSS KIRKYARD.

Plain slabs or coped stones, possibly once lids of stone coffins, are not uncommon in Scotland, nor can it be said that coffins made of stone are rare, but I believe examples of sarcophagi, complete with their covers, are not numerous.

The New Statistical Account (Dumbartonshire), p. 161, mentions the presence of stone coffins in the kirkyard of Luss, but only one actually exists in this cemetery so rich in mediæval monuments. There are, however, several large pre-Reformation coped stones, a few having possibly served as coffin-lids, some of which, in the eighteenth century and even earlier, have been utilised as memorials to the dead. Many bear ornamentation, but so weathered are the carvings that, save in the instances recorded in our *Proceedings*,² there is little of moment in the low coped stones, although they are interesting in providing material for study of types, and, perhaps, evolution of this category of sepulchral monuments in Scotland.

The one complete mediæval example, comprising lid and coffin, I had long ago purposed recording in all its details, especially as I knew the erroneous and inadequate reference to it which appeared over thirty years ago,³ but the monument could not be inspected with the attention it merited until raised and cleaned. Opportunity to effect this did not

¹ *Proc. Soc. Ant. Scot.*, vol. lviii, pp. 128-9.

² *Ibid.*, vol. lxii, pp. 88-95.

³ *Trans. Glas. Arch. Soc. (N.S.)*, vol. v, pt. i, p. 26, and fig. 4.

offer until the early summer of 1934, but the delay and labour finally involved have been amply repaid by the revelation of features, which accord well with a monument of such proportions and external ornamentation.

For as long as can be remembered only the huge lid was visible, with but the merest outline of the injured receptacle or coffin underneath exposed by a break in the covering near the eastern end of the north side (fig. 5). The lengths of both lid and coffin are the same, namely, 6 feet 11 inches. The lid is steeply coped, measuring 1 foot 2 inches in height at the western end, but it rises and becomes narrower towards the other extremity, which is 1 foot 3 inches high. At the western end the width is 2 feet, and at the eastern it was originally $16\frac{1}{4}$ inches but the sides are

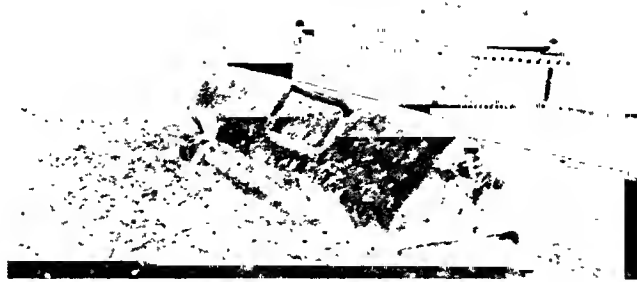


Fig. 5. Sarcophagus at Luss: North side.

now broken. Each end of the lid overlaps the underlying coffin by 2 inches on either side. For a little more than 3 inches the sides are perpendicular, above which they incline steeply towards the rounded ridge.

On the dexter or south side of the cover the representation of a chalice is carved in the high relief of one inch at a distance of 2 feet 2 inches from the west end (fig. 6). This chalice, perfectly plain and of archaic type, $8\frac{1}{4}$ inches high, measures $5\frac{3}{8}$ inches across its top and 5 inches across the base. A certain degree of emphasis has been imparted to the sculptured symbol as roundness is apparent in the cup, its base, and central portion or knob. The quadrilateral forming the northern side is also ornamented, the symbol here taking the form of an open book represented by an oblong $10\frac{1}{2}$ inches by $7\frac{1}{2}$ inches standing out one inch from the body of the monument at 1 foot $10\frac{1}{2}$ inches from the western end. These symbols, of course, point to the fact that the sarcophagus had contained

the remains of one in major Orders.¹ It is unlikely that so elaborate a monument was fashioned to hold the body of one inferior in rank to a priest.

In the centre of each of the two ends is carved a raised cross of simple but pleasing appearance despite absence of symmetry in treatment. At the west the cross, measuring $7\frac{1}{2}$ inches in height and $6\frac{1}{4}$ inches across, expands uniformly from the middle towards its four extremities. The foot or eastern end bears a cross of Latin type but expanded at the ends like its opposite and measuring 10 inches by 7 inches.

When the lid was raised, the nether surface was found to be hollowed to fit over a human body. Along the sides and foot the thickness of



Fig. 6. Sarcophagus at Luss: South side.

stone is from 3 to 4 inches, providing close adjustment with the underlying coffin. The cavity has been most carefully hewn, the part intended to receive the head being rounded, as are the corners made for the shoulders. This portion is slightly staggered. The hollow, 6 inches deep, formed to hold the body is rounded where the perpendicular sides meet the flat top, but the foot is chiselled to an angle. The elliptical receptacle for the head is 4 inches in depth where it joins the undercutting at the commencement of the upper part of the main cavity.

Unfortunately, part of the wall of the lid is missing, but the break permitted of a preliminary examination of the interior of the cover and

¹ On ordination the subdeacon receives symbolically the chalice and Book of Epistles, signifying that he is permitted to handle the sacred cup when assisting the celebrant at High Mass, at which he reads the epistle of the day. The conferring of the diaconate includes the porrection of the Book of Gospels to the ordinand, thus testifying to his privilege as deacon of singing the gospel at High Mass. The priestly order, with the power of celebrating Mass, of course embraces the two lower ones, and logically its true symbols should be a chalice and a host or wafer. On sepulchral monuments commemorating priests the host is a most common symbol, and usually it is associated with a chalice, but many examples can be cited where chalice and book alone are represented.

coffin proper. This first inspection showed that the monument was of such interest that I was led eventually to make a complete investigation by digging round the sarcophagus and separating the upper and lower compartments. This work brought to light certain features, and on cleaning and finally raising the lower part, it was seen that the latter also possessed peculiarities which, I believe, have no parallel in Scotland.

Pieces of the wall of the coffin are wanting on one side, and the foot is cracked obliquely across, all the damage having, no doubt, been inflicted when the monument was rifled on being moved. Its removal from its original situation is indicated by the fact that the stone coffin has served as a post-Reformation memorial. Evidence of this is furnished by the deeply carved initials "R. McF." in the style of the eighteenth century near the chalice, cut possibly about 1771 when the pre-Reformation kirk was taken down.

The coffin, like the lid, is wrought from a single block of grey sandstone. Its length of 6 feet 11 inches has already been stated, but it is not so wide as the covering, being 1 foot $8\frac{1}{2}$ inches at the top and tapering to $15\frac{1}{2}$ inches at the foot. The entasis is more accentuated on the sinister. The thickness is consistently one of 2 inches for the sides and foot. For reception of the corpse the cavity has been made 8 inches deep, so that, with the space provided above by the hollowed lid, ample room was afforded even for a heavily shrouded body. Near the middle of the cavity the thickness of the bottom (4 inches) is pierced by a circular hole ($3\frac{1}{2}$ inches in diameter) to provide an outlet for any exudation.

From the twelfth century until the end of the Middle Ages a feature frequently observed in sarcophagi is a hollow specially made for receiving the head. Sometimes lateral supports are provided where the coffin is otherwise devoid of the small compartment. In the Luss example a cavity is present and with it the unique addition of a rest for the neck (fig. 6). The hollow, instead of being of the ordinary sort with flat base on the same plane as the bottom of the coffin proper, is concave and on a higher level than the larger compartment from which it is separated by the neck-rest. This support, 3 inches thick at its base, has a carefully rounded ridge. Through it, and slightly to the left of the centre, is a narrow channel out of line with the longitudinal axes of coffin and sides. From the smoothness of the groove it seems that this is an intentionally made cutting. Neither in Scotland nor in other countries can I locate any sarcophagus with a neck-rest resembling the support with which is fitted the Luss example. If cognate cases be eventually found in Scotland, may not such discoveries point to this particular type of rest as a Scottish feature? Fig. 7 shows all details of the sarcophagus.

A remark may be made concerning the age of the monument figured. Sarcophagi, as successors of similar pre-Christian mode of entombment and commemoration of the dead, were used in the early centuries of the

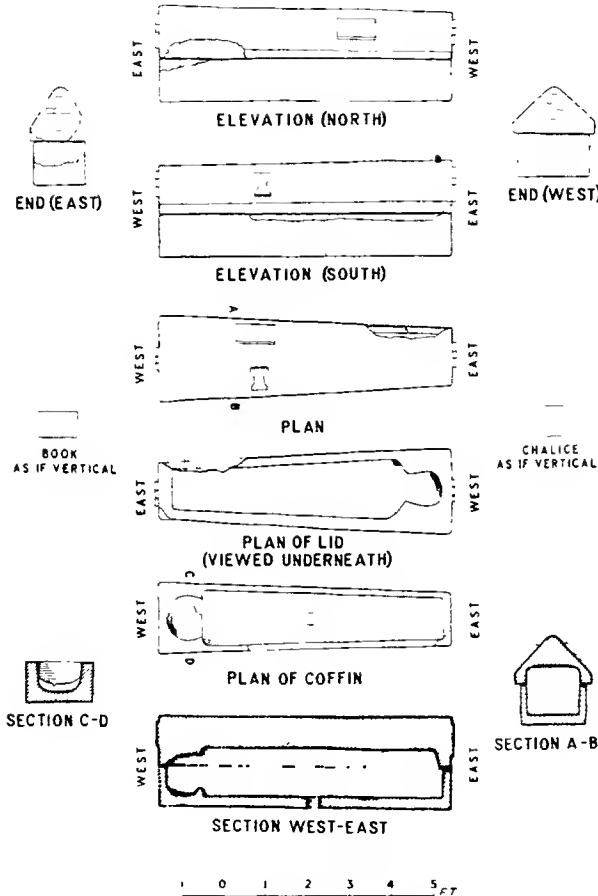


Fig. 7. Sarcophagus at Luss: Key.

present era. Scotland itself offering instances, to quote only the monuments in Govan. Our Honorary Fellow, M. Léon Couët, in his *Art Mérovingien et Carolingien* has illustrated several French and other examples provided with various forms of compartments or supports for the head.¹ M. Couët considers that this category belongs to the eleventh or twelfth century.² This opinion can often be supported by such

¹ *Op. cit.*, pp. 54 ff.

² Letter to author, dated Les Andelys (Eure), 18th December 1934.

conclusive evidence as the identity of the deceased for whose sepulture the monuments were fashioned. But the Luss specimen, agreeing closely in details with these Continental sarcophagi, is probably later by a century at least, because the ecclesiastical emblems of chalice and book indicate an advance in ornamentation despite the crosses of archaic pattern at the ends. Various types of crosses occur on the older monuments, as do other symbols of recondite nature testifying to great antiquity. In England, as in France, the definitely sacerdotal, social or heraldic, and occupational symbols as additions to the cross appear to have been introduced later. In this respect, therefore, it is unlikely that monumental art in Scotland should present much difference, considering that this class of stone coffin was widely distributed.

III.

THE METALLURGICAL ANALYSIS OF THREE BRONZE AGE AXES. BY LIEUTENANT-COMMANDER S. S. CRICHTON MITCHELL, R.N., AND MARGARET E. CRICHTON MITCHELL, PH.D., F.S.A. SCOT.

1. FLAT COPPER AXE FROM IRELAND.

This axe was lent for the purposes of examination by the National Museum of Ireland.

An approximate qualitative analysis showed the following chemical composition:—

Copper.	98	per cent.
Arsenic.	1·5	..
Silver.	·1	..
Silicon.	·1	..

Tin was present, but less than ·05 per cent.; also traces of lead, manganese, aluminium, nickel, and zinc. The comparatively high percentage of arsenic in this ore should render easy the identification of its source. Its chemical composition, however, does not correspond with that of any of the well-known Irish copper ores.

The axe measures $4\frac{7}{16}$ inches in length, $2\frac{1}{2}$ inches across the cutting edge, and $\frac{1}{2}$ inch in greatest thickness.

A study of the microstructure leads to the following deductions:—

The axe has been cast in a moderately thick mould of clay, sand, or stone. The dendrites have none of the characteristics of the slow cooling which would take place in a very thick mould or in one sunk in the earth for support: nor are they similar to dendrites formed during the swift cooling which results from the use of a metal mould.

Some form of header has been used, as there is no collection of surface slag at the butt of the axe.

Immediately before pouring, the melt was thoroughly skimmed and was probably stirred by a wooden stick, since the oxygen content in this axe is much below normal, even assuming a reducing atmosphere around and over the crucible. A high oxygen content tends to render

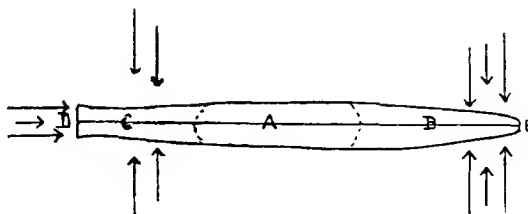


Fig. 1. Section of Irish Flat Axe of Copper.

copper brittle. It is therefore a moot point whether the use of a wooden stick was fortuitous or otherwise.

At the moment of pouring the temperature of the melt was low, probably about 1100°C .¹

After casting, the axe was forged in the areas B and C but not in area A (fig. 1). The area C was forged at a higher temperature than the area B, thus suggesting that C was worked before B. Subsequently the axe was reheated, and thereafter the butt of the axe, edge D, was hammered. It is of interest to note that edge E had never been hammered by, or used to hammer, any hard object.

Proof of this sequence of events is afforded by the microstructure of the axe, wherein there are indications that the areas B and C have been both "hot" and "cold" forged. The direction of the forging blows is shown by the general orientation of the forged crystals. The edge E exhibits no evidence of "cold" working.

Some of these deductions are worthy of further consideration. Why was the axe forged? Hammering is generally undertaken either to alter the shape of an object or to increase its hardness, in which case it is carried out below 550°C . Since the form of this axe is so simple

¹ Pure copper solidifies at 1082°C .

that it seems incredible all the necessary shaping could not have been achieved by the mould. It follows that the forging was done to increase the hardness of the metal. But the increased hardness which would result from the "cold" forging was entirely lost by the subsequent reheating. Hardening, then, does not appear to have been the motive. But whatever the reason for the hammering may have been, it is here suggested that the reheating was due to the axe being subsequently used as a model for a clay mould, which would be baked with the model axe *in situ*.¹ This in turn argues that the open stone moulds, occurring in North-eastern Scotland² and presumed to be for the manufacture of flat axes, may either be moulds for the metal models of clay moulds or else the relics of an alternative but more primitive metallurgical technique. But a stone mould would be an unwieldy object in the outfit of a travelling smith. Stone moulds would be easily cracked by heat, and when lost could not be quickly replaced. The clay mould was both more economical and easier to make, while it only necessitated the possession of one or two metal models in the equipment of the early itinerant craftsmen.

2. AXE WITH STOP RIDGE AND ORNAMENTED FLANGES FROM ST ANDREWS, FIFE.

This early example of a palstave was only available for a very limited examination.

The axe measures $4\frac{7}{16}$ inches in length and $2\frac{11}{16}$ inches across the cutting edge.

It was impossible to make a qualitative analysis, but the character of the microstructure indicated a true bronze with 12 to 15 per cent. of tin.

The axe has been cast in a bivalve mould, and from signs in the microstructure the mould may possibly have been embedded in the earth so as to maintain an upright position. The mould has been of clay, since the appearance of the original cast surface beneath the patination was too smooth to have been in contact with stone.

The metal had been poured at the undesirably high temperature of about 1200° C.

Insufficient skimming of the melt beforehand probably accounts for the presence of a considerable amount of slag, while the header used with the mould was so short that the butt of the axe was choked with dross.

¹ Clay bakes at 600° C., which would be a sufficient temperature to produce the process of recrystallisation.

² *Proc. Soc. Ant. Scot.*, vol. xxxviii, pp. 487-505; vol. xl, p. 35; vol. lxiii, p. 12; vol. lxiv, p. 14.

After casting, the axe was reheated and the flanges lightly forged until the temperature had fallen below 550° C. Subsequently, the axe was reheated a second time, no doubt in order to facilitate the completion of the herring-bone pattern on the flanges.

The patination on this axe is very pronounced, and a study of this phenomenon provides the following information:—

In the patina are three differently coloured constituents. Next to the metal lies a red layer, succeeded in due rotation by a black and a green layer. The red layer is not uniformly present, and the different layers, particularly the black and the green, tend to merge into one another. A chemical analysis of the patina shows:

Sand, 43 per cent. approximately.
 Copper carbonate } in considerable quantities.
 Copper hydroxide }

Another constituent was probably copper sulphate.

The patina on the axe has possibly been produced by contact of the metal with carbonic acid gas (CO_2), which would most probably arise from the decomposition of vegetable matter. In such circumstances the hydroxide and carbonate are formed, and their intermediate reaction on the metal produces cuprous and cupric oxides. The carbonate is green, the cuprous oxide (Cu_2O) is red, and the cupric oxide (CuO) is black. The surface finish on the patina has perhaps resulted from water action. This conclusion is supported by the quartz grains, not fused, whose sharp angles indicate that they are water, not wind, borne.

3. A BRETON SOCKETED AXE.

This axe was purchased at a public sale in Edinburgh. It bears the legend: "Said to be from Vale of Menteith." The form is indisputably Breton.

A qualitative analysis showed the following percentage chemical composition:—

Copper	54.64	Selenium . . . . .	.02
Lead	43.3	Nickel . . . . .	.02
Tin	1.46	Zinc . . . . .	.01
Sulphur . . . . .	.22	Phosphorus . . . . .	.005
Iron . . . . .	.12	Silver }	Traces
Arsenic . . . . .	.09	Magnesium }	
Antimony . . . . .	.06		

The axe (fig. 2) measured 5 inches in length and $1\frac{3}{8}$ inch across the cutting edge. The socket measured internally $\frac{1\frac{3}{8}}{16}$ inch by $\frac{1\frac{1}{8}}{16}$ inch.

It is practically certain that two different ores were used in the manufacture of this axe, since no known copper ore contains all the elements present in the analysis. The lead content is the important feature. If its presence is due to its being a constituent of the ore, then "Bournonite" may have been used, since this mineral contains at least 43.0 per cent. of lead.¹ The only alternative is that the lead was specifically added to a copper-tin ore, but the presence of such a

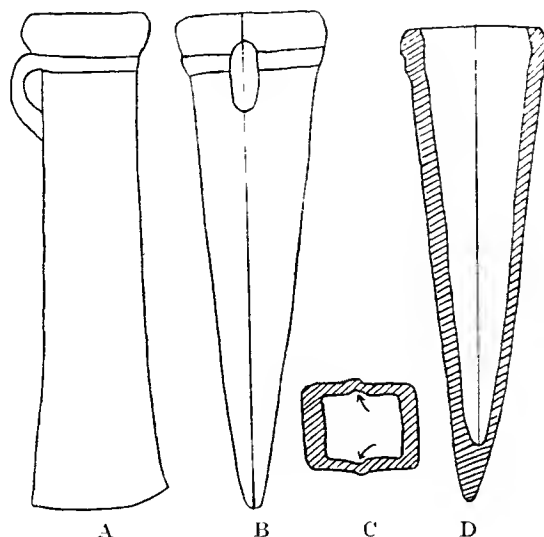


Fig. 2. Breton socketed Axe.

quantity of lead would make the bronze exceedingly brittle and render the axe quite useless for all practical purposes.²

A study of the micro-structure shows that the axe has been cast and that no forging has been done. The fact that there is practically no slag in the axe shows careful skimming of the melt and perhaps suggests that an ingot was melted down. The oxygen content is about .1 per cent. This indicates not only the possible stirring of the melt

¹ Chemical composition:

Lead.	42.4 per cent.
Copper.	13.0 ..
Antimony.	25.0 ..
Sulphur.	19.6 ..

"Bournonite" occurs at Alais, near Nîmes, and at Pontgibaud, north-east of Limoges.

² Evans, *Ancient Bronze Implements*, pp. 417, 445.

with a wooden stick, but also the presence of a reducing atmosphere formed by charcoal built around and over the crucible.

The lead is very evenly distributed throughout the axe, and this, together with certain other evidence of a purely metallurgical nature, suggests the possible conditions in the crucible. A considerable variation in temperature might be expected within the crucible. Charcoal heaped over the top would produce a higher temperature there than at the bottom, where some form of draught would naturally be introduced. Under these conditions the liquid towards the top would be relatively copper-rich, while the cooler liquid at the bottom would be relatively lead-rich. Microscopic examination of the axe provides clear evidence of the simultaneous existence of both the copper-rich and lead-rich mixtures.

Immediately prior to pouring, the melt was stirred thoroughly. This mixed the various constituents, but the time interval was too short to allow of them changing their state, as would occur if the stirring were prolonged sufficiently to produce a homogeneous temperature.¹ The mean temperature of the melt when poured was certainly low, and may have been as low as 970° C. Whether intentional or not, the almost immediate solidification resulting from this had the effect of trapping the heavy lead-rich liquid and preventing it from gravitating to one end of the axe.

The axe was then cast in a bivalve clay mould of moderate thickness. The joints of the mould are visible along the plane through the loop of the axe and there is a pronounced "fin" (fig. 2. C).

The core has been of clay, and the inner "fins" seen on fig. 2. C indicate that it had been previously fashioned in a separate bivalve mould. This deduction is further supported by the fact that the core itself is not symmetrical. If it were hand-made it would at least have been symmetrical to the eye, but if made in a bivalve mould its symmetry would depend upon the two halves of the mould being exactly similar to one another; and this is difficult to achieve.

A cross-section of the axe (fig. 2. D) shows that the core was not accurately placed, and the error of position resulted in the metal being thinner at one side than the other.

From the bottom of the socket a quantity of sand and clay was recovered. This was almost certainly from the core and not from any extraneous matter which had entered subsequently. The sand was principally quartz with some felspar, and the rounded edges of the grains indicated that they were wind borne. Iron was also present; it may have served to bind the clay.

¹ The mixing was analogous to the mechanical union of oil and water.

Several interesting features emerge from the examination of this axe. From a purely metallurgical point of view the casting exhibits a notable degree of technical skill. The oxygen content is suitably low. The axe is commendably free from slag and dross. The lead is remarkably evenly distributed throughout. In the latter connection it is of interest to observe that an alloy of comparable composition is used in modern engineering, and even to-day it is a matter of considerable difficulty to achieve the regular distribution of the lead.

The absence of forging is important, since from the nature of its composition this axe was not forgeable: the high lead content would undoubtedly have produced crumbling. This may indicate that the Late Bronze Age smiths were aware of the effects of a high lead content in a bronze alloy. This consideration reverts to the fundamental problem as to whether the lead was purposely added or not. It must be remembered, however, that where several castings are being simultaneously poured from a melt accidentally rich in lead, such as "Bournonite," the last will tend to have a higher lead content than the earlier examples owing to the tendency of the lead-rich constituents to sink to the bottom of the crucible. But it is almost certain that two ores were used in the manufacture of this axe. The evidence inclines to the conclusion that the smith who made this axe was cognisant of the amount of lead in the bronze alloy. If so, the axe constitutes one of the earliest commercial frauds, for it could never have withstood even moderate usage.

The thanks of the authors are due to Professor F. A. Ruddock for his co-operation and kind advice in connection with this paper.

IV.

EARTH-HOUSE AT PORTNACON, SUTHERLAND.

BY DR R. J. BUXTON.

In the *Report and Inventory of Monuments and Constructions in the County of Sutherland*, No. 160 of the Parish of Durness is a description of "Earth-house, Portnacoon." This lies close to a road bridge, half a mile north of Portnacoon Pier on the west side of Loch Eriboll, and was visited in 1909 when some measurements were taken, but these have since been found incorrect. In 1927 my brothers, Mr Alexander MacDonald, and I determined to explore it in spite of fearful warnings from the local inhabitants, some of whom assured us that the place was haunted and to meddle with it was courting disaster, and others that it was a great underground loch of unfathomable depth.

Despite these rumours, however, Mr D. M. Reid, of Harrow School, had been excavating at various times, and had discovered the roof of the building. Mr Donald MacDonald showed us a small hollow in the ground with a large heavy stone in it. At the lowest part of the hollow we could just see an opening. With the help of motor-jacks we removed this stone, which was 3 feet 6 inches long and 2 feet 6 inches high, and probably used for blocking the entrance. It now lies just outside it. Having removed the slab, we were able to dig out the heap of earth and stones which was blocking the tunnel. At length after many days' digging we came upon a small flight of stone steps between 17 inches and 28 inches wide, with a stone wall on each side. There was no mortar, and we could see no tool marks on the stones. Seven steps led down to the entrance of the gallery and then five more to a mud floor (fig. 1). These varied from 2 inches to 9 inches in height.

The entrance is 2 feet 4 inches wide and 3 feet high with no traces of jambs or bar-holes. At the foot of the staircase was a gallery filled with water, but we ventured a little way down the tunnel, and by tapping on the roof others outside were able to mark its direction so that we could examine it from the surface.

The roof was soon exposed, but before the gallery could be farther explored it was necessary to get rid of the water. We dug a trench from the end of the gallery to a burn nearby. This took us no little time as we were only able to work at it for a few weeks each year. Eventually

it was finished. The trench dug was some 23 yards long, crossing the old road to Durness, the outline of which can still be traced. The structure was about 10 feet deep at the upper end, and from here we



Fig. 1. Portnacon Earth-house: entrance from interior.

drained most of the water away, leaving a long low gallery from 4 feet 4 inches to 5 feet 5 inches high.

The floor is of earth covered with loose stones and the walls stoutly built of undressed blocks of all shapes and sizes, rising in an outward curve, so that while the width at the floor in the middle of the gallery is 4 feet 3 inches, half-way up it is 5 feet, and at the roof 3 feet 5 inches.

The roof is formed of stone lintels spanning the building; these average about 4 feet 8 inches in visible length, 1 foot 8 inches in width, and 8 inches in thickness.

The gallery itself is 27 feet in length along the middle of the floor and at the inner end 4 feet 9 inches high, with a width of 5 feet 7 inches (fig. 2). In the north-east corner of this widened part is a hollow in the floor, 4 feet in diameter and about 2 feet deep, by which the



Fig. 2. Portnacon Earth-house: inner end.

gallery may originally have been drained. To avoid its refilling we have put in a drain-pipe from this hollow to the burn.

Nothing of archaeological interest in the matter of relics was found during our excavations, but the earth-house is in a remarkably good state of preservation and can easily be visited by anyone passing along the road from Durness to Portnacon. Subsequently, when the structure was drained, Mr Alexander MacDonald examined the deposit on the floor, but he found only some fragments of bone too small to be identified.

MONDAY. 13th May 1935.

THOMAS YULE, W.S., in the Chair.

Before proceeding with the ordinary business of the Meeting, the Chairman proposed the adoption of an Address of congratulation to His Majesty the King, the Patron of the Society, on the occasion of His Majesty's Silver Jubilee. The Address, which follows, was unanimously adopted.

UNTO THE KING'S MOST EXCELLENT MAJESTY.

May it please Your Majesty.

We, Your Majesty's most dutiful and loyal subjects, the President and Fellows of the Society of Antiquaries of Scotland, incorporated by Royal Charter, present our humble duty to our Most Gracious Sovereign and Patron. Moved by profound admiration for the courage and wisdom with which Your Majesty has guided the ship of state through dangers and troubles greater than have ever before beset the Kingdom and the Empire, we beg leave to tender to Your Majesty our sincere and heartfelt congratulations on the completion of the twenty-fifth year of Your Majesty's reign.

In these congratulations we trust we may be allowed to associate Her Most Gracious Majesty the Queen, Whose place in the regard and affection of Your Majesty's subjects all the world over is comparable only to Your Own. At the same time we venture to express the hope that in the Providence of Almighty God, Who alone maketh the storm a calm, Your Majesty may long be spared to rule in peace over a contented and devoted People.

Signed in the name and by the authority of the Society of Antiquaries of Scotland, in general meeting assembled, and sealed with the common seal of the Incorporation this thirteenth day of May in the year of our Lord One thousand nine hundred and thirty-five.

GEORGE MACDONALD, *President*.

DAVID ANDERSON, *Vice-President*.

W. MACKAY MACKENZIE, *Secretary*.

The following reply to the Address has been received by the Secretary:

SCOTTISH OFFICE,
WHITEHALL, S.W. 1.
5th June 1935.

SIR,

I am directed by the Secretary of State to say that he has been Commanded by The King to convey to you His Majesty's thanks for the loyal and dutiful Address from the Society of Antiquaries of Scotland on the completion of the Twenty-fifth Year of His Majesty's Reign, and to assure you that His Majesty deeply appreciates the sentiments of loyalty and affection to which it gives expression.

I am, Sir,

Your obedient Servant,

(Sgd.) R. N. DUKE.

A Ballot having been taken, the following were elected Fellows:—

WILLIAM A. COCKS. The Lilac Cottage, Ryton, Co. Durham.

DONALD J. FORBES, M.B., Ch.B., Medical Superintendent, Craigmill House, Strathmartine, by Dundee.

PHILIP LINDSAY, 14A Priory Road, London, N.W. 6.

WILLIAM FRANCIS RANKINE, Badshot Lea, Surrey.

ARTHUR W. WILSON, H.M. Inspector of Taxes, Cupar, Fife.

There were exhibited an inscribed stone found at Ruigh-ic-ille Mhuire, Glen Urquhart, Inverness-shire, and photographs of two symbol stones of red sandstone, found at Drumbuie, Glen Urquhart, deposited on loan in the Museum by the Trustees of Caroline, Countess of Seafield. The symbol stones formed the covering of a cist-like structure containing earth and sand mixed with ashes and charcoal, but no traces of human remains.

The first stone measures $13\frac{1}{2}$ inches in length, 9 inches in breadth, and $3\frac{1}{2}$ inches in thickness, and on the face bears the inscription $\text{X}|\text{S}^{\text{T}}|\text{B}|13\rangle11$ (fig. 1). (See *Proceedings*, vol. xliii, p. 335.)

The first symbol stone is of irregular four-sided shape and measures 2 feet 4 inches in height and 2 feet 4 inches in breadth. On the face is the serpent and Z-shaped rod symbol, and below it the spectacle ornament (fig. 2). The second stone is of irregular shape, incomplete, and broken into three parts, and measures 3 feet 8 inches in height, 2 feet 9 inches in breadth, and $2\frac{1}{2}$ inches in thickness. At the left-hand top corner is the tail half of the fish symbol, the rest being broken off; below it is the mirror-case symbol and to the right the mirror and comb



Fig. 1. Inscribed Stone from Ruigh-ic-ille Mhuire, Inverness-shire.

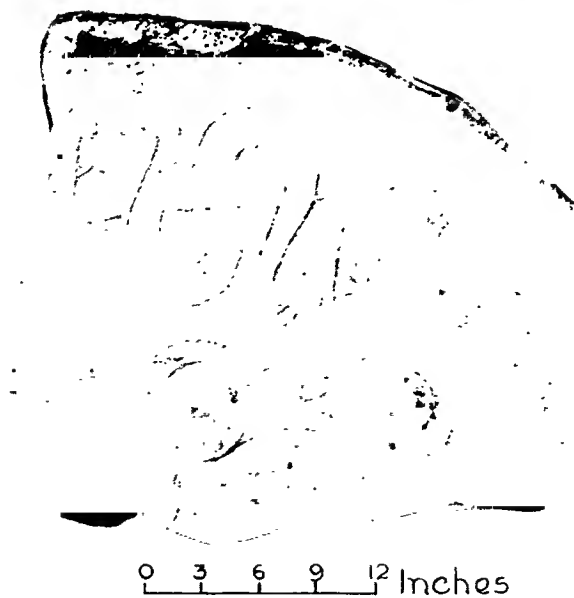


Fig. 2. Symbol Stone from Drumbuie, Inverness-shire.

symbol (fig. 3). The body of the fish is decorated with crossed lines. The mirror-case bears a quatrefoil with a dot and circle in the centre,

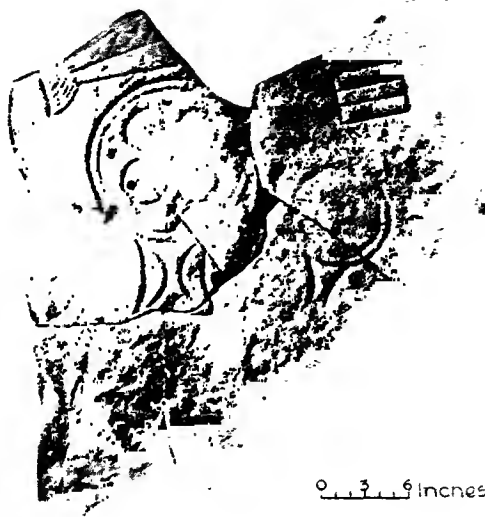


Fig. 3. Symbol Stone from Drumbuie, Inverness-shire.

and four dots, one between each petal, and two semi-circles placed back to back in the lower portion. All the designs are incised. (*Early Christian Monuments*, pt. iii, p. 99, figs. 101 and 102.)

The following Donations to the Museum were intimated, and thanks voted to the Donors:—

(1) By WALTER G. GRANT, F.S.A.Scot.

Leaf-shaped Arrow-head of grey Flint, the ends imperfect, now measuring 1 inch by $\frac{1}{2}$ inch; rude Saw of brown Flint, $1\frac{15}{16}$ inch by $\frac{11}{16}$ inch; two Scrapers of yellow Flint, 1 inch by $\frac{7}{8}$ inch and $\frac{11}{16}$ inch by $\frac{5}{8}$ inch; twelve Scrapers of grey Flint; Core of pinkish-white Flint, $\frac{7}{8}$ inch long. From Newhouse, Hullion, Rousay, Orkney.

Two Scrapers of grey and brown Flint, measuring $1\frac{1}{8}$ inch by $\frac{11}{16}$ inch and $\frac{13}{16}$ inch by $\frac{3}{4}$ inch; worked Flint, light yellow, measuring $\frac{7}{8}$ inch by $\frac{11}{16}$ inch. From Hullion, Rousay.

Two Scrapers of grey and yellow Flint, measuring $1\frac{1}{4}$ inch by $\frac{7}{8}$ inch and $\frac{1}{2}$ inch by $\frac{5}{8}$ inch, from Nears, Rousay.

Flint Point of triangular section, calcined, measuring $\frac{15}{16}$ inch in length, the sides $\frac{5}{16}$ inch broad, from Frotoft, Rousay.

Scraper of light grey Flint, measuring $\frac{3}{4}$ inch by $\frac{5}{8}$ inch: worked light grey Flint, measuring $1\frac{1}{8}$ inch by 1 inch: two light-coloured and brown Flint Scrapers, measuring $\frac{13}{16}$ inch by $\frac{3}{4}$ inch and $\frac{5}{8}$ inch by $\frac{9}{16}$ inch: pointed Tool of white Flint, of triangular section, with battered back, measuring $1\frac{3}{8}$ inch by $\frac{3}{8}$ inch: pointed Tool of light colour, battered along both edges, measuring $1\frac{5}{16}$ inch by $\frac{5}{16}$ inch. From field above Midhowe Broch, Rousay.

(2) By A. D. LACAILLE, F.S.A.Scot., the finder.

Point of Chalcedony, measuring $1\frac{1}{2}$ inch long: double Graver, measuring $1\frac{5}{8}$ inch long, Knife Graver, measuring $1\frac{5}{16}$ inch long, Blade with battered back, measuring $\frac{3}{4}$ inch in length, Knife Point, measuring $1\frac{1}{2}$ inch long, all of Flint, and late decadent Magdalenian or Azilian in period; Quartz Knife, measuring $1\frac{15}{16}$ inch, and Chert Knife, measuring $1\frac{11}{16}$ inch in length, Azilian. From Limeuil (Dordogne).

(3) By DRAYTON PALMER, 10 Clark Avenue, Edinburgh, the finder, through Miss M. E. CRICHTON MITCHELL, Ph.D., F.S.A.Scot.

Barbed Arrow-head of yellow Flint, with broad stem, measuring $1\frac{11}{16}$ inch by $1\frac{1}{2}$ inch, found in the Dryfe Valley (Sibbaldbie), near Lockerbie, Dumfriesshire.

The following purchases for the Museum were intimated:—

Blade with battered back, of light-coloured Chert, measuring $1\frac{5}{16}$ inch in length: Blade with battered back, Quartzite, measuring $\frac{3}{4}$ inch in length: Angle Graver, measuring $1\frac{5}{16}$ inch in length, three Scrapers, measuring $\frac{13}{16}$ inch by $\frac{3}{4}$ inch, $\frac{7}{8}$ inch by $\frac{5}{8}$ inch, and $\frac{5}{8}$ inch by $\frac{1}{2}$ inch, side Scraper, measuring $1\frac{5}{8}$ inch by $1\frac{5}{16}$ inch, and two worked objects, measuring $1\frac{5}{16}$ inch and $1\frac{1}{8}$ inch in length, all of yellowish Flint. From Freswick Bay (Flint site), Caithness.

Encoche of Flint, measuring $\frac{3}{4}$ inch in length: side Scraper of light-coloured Chert, measuring $1\frac{7}{8}$ inch by $1\frac{3}{8}$ inch: Bone Pin with 'mell'-shaped head, half of the stem broken off, now measuring $1\frac{3}{16}$ inch in length. From Freswick Links, Caithness.

Six slightly worked Flints of grey colour, from Midtown, Freswick.

Cup of Steatite (fig. 4), the bowl measuring 4 inches in diameter and $1\frac{7}{8}$ inch deep externally. The handle, which is of flat rectangular shape,

is placed midway between the lip and the base, and measures $1\frac{3}{4}$ inch in length, $1\frac{1}{16}$ inch in breadth, and $1\frac{1}{8}$ inch in depth. The cup was ploughed up on the farm of Altnamain, Edderton, Ross-shire.

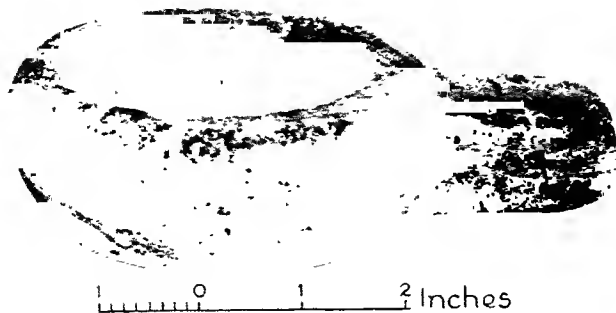


Fig. 4. Stone Cup from Altnamain, Edderton.

Relics from Abbotsford:—

Old Scottish Gun with snaphance lock, the barrel measuring 3 feet $6\frac{3}{4}$ inches in length, and the total length 4 feet 9 inches. The stock curves downwards with the concavity on the upper edge and it is decorated on both sides by carved flutings. The end of this butt is covered with a brass plate. On the lock-plate are the initials of the maker, J. ? D.

Socketed Bronze Axe with the mouth of the socket oval, the sides flattened, the edges slightly chamfered, and a broad flat moulding between the loop and mouth of socket. It measures $2\frac{3}{4}$ inches in length and $2\frac{1}{16}$ inches across the cutting edge which has recurved ends; the mouth of the socket measures $1\frac{9}{16}$ inch by $1\frac{3}{8}$ inch. The axe is covered by a fine, thick, light green patina. Found, in September 1927, beside a rabbit-hole, in the Lower Thicket (10 yards above the lower path), at Abbotsford.

Bronze Spear-head with small protected loops at the base of the blade. The mouth of the socket and the edges of the blade are imperfect. It now measures $6\frac{11}{16}$ inches in length and $\frac{7}{8}$ inch across the blade. It bears the label, "Spear-head dug out from encampment near the Eildon Hills," in the handwriting of Sir Walter Scott.

Bronze Sword, contorted by heat, bent and broken into two parts near the centre of the blade, measuring $24\frac{1}{8}$ inches in length and $1\frac{3}{4}$ inch across the blade. There are three rivet holes on the side of each haunche and a long slot in the hilt plate. Point portion of a Bronze Sword, contorted by heat, measuring $10\frac{3}{4}$ inches in length and $1\frac{3}{4}$ inch in breadth.

Blade of Bronze Sword, broken off under hilt and bent back at the point, measuring $14\frac{1}{4}$ inches in length. It has not been burnt and has a fine bronze-green patina on one side. Point of a Bronze Spear-head measuring $3\frac{11}{16}$ inches in length and $2\frac{1}{16}$ inches in breadth. From the founder's Hoard found in Duddingston Loch. (*Proceedings*, vol. lvi. p. 360.)

Halbert of Bronze or Copper, measuring $11\frac{13}{16}$ inches in length and $3\frac{1}{8}$ inches across the butt. There are four stout rivets in the butt, hammered flat on two sides and measuring $\frac{7}{8}$ inch in length. The edge of the butt has been broken opposite one rivet hole and has been patched by riveting on a thin plate. It is much corroded, but on one side shows the remains of a thick dark green patina.

Flat Bronze Axe, ornamented on both sides by incised reversed triangles and on the top and bottom edges by oblique grooves, measuring $5\frac{7}{16}$ inches in length, 3 inches across the cutting edge, and $\frac{3}{8}$ inch in thickness. In late times the butt end has been hammered out of shape and a small hole has been drilled in it.

Three flanged Bronze Axes, measuring $5\frac{7}{16}$ inches, $6\frac{1}{2}$ inches, and $5\frac{7}{8}$ inches in length, $1\frac{3}{4}$ inch, $2\frac{1}{8}$ inches and $2\frac{5}{16}$ inches across the cutting edges, and $1\frac{3}{8}$ inch, $1\frac{7}{16}$ inch, and $1\frac{5}{16}$ inch across the wings. The first is of early type and the other two later, the third having also a loop.

Five socketed Bronze Axes, measuring $4\frac{1}{8}$ inches, $3\frac{7}{8}$ inches, $3\frac{9}{16}$ inches, $3\frac{1}{4}$ inches, and $3\frac{1}{8}$ inches in length, and 2 inches, $1\frac{7}{8}$ inch, $1\frac{1}{2}$ inch, 2 inches, and $2\frac{1}{8}$ inches across the cutting edges. The first, which has a break in the socket beside the loop, has a series of cord mouldings under the mouth of the socket. The second has two raised mouldings under the mouth of the socket, and on each side three flattened pellets, placed transversely $\frac{1}{4}$ inch below the lowest moulding. The last, which has part of the socket broken off, has three ribs hanging from a slight transverse moulding.

Bronze Sword, broken across the hilt plate, measuring $21\frac{1}{4}$ inches in length and $1\frac{5}{8}$ inch in breadth across the blade.

Bronze Ring, measuring $3\frac{11}{16}$ inches in external diameter, the ring, which is of D-shaped section, being $\frac{3}{8}$ inch in thickness.

Roman Bronze Patera, the bowl measuring $6\frac{5}{8}$ inches in diameter and $3\frac{1}{8}$ inches in height. The handle, which is $5\frac{7}{8}$ inches in length, has a circular perforation in the end, with a cable moulding round the edge; along its centre is a 'thyrsus' engraved on it. The bowl is battered and broken in places.

All these have no localities but were probably found on the Scottish side of the Border.

Latten Spoon, slipped in the stalk, and with a fig-shaped bowl, on the back of which, in an oval panel, is engraved "Found in the camp at Burnswark."

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By H.M. GOVERNMENT.

Report by the Keeper of the Registers, and Records of Scotland. 1935. Edinburgh, 1935.

Calendar of Treasury Books. 1st September 1698 to 31st July 1699. Vol. xiv. London, 1934.

Ancient Monuments of Great Britain. List of Monuments prepared by the Commissioners of Works. (To 31st December 1934.) London, 1935.

(2) By CHARLES SCHLEICHER, F.S.A.Scot.

Répertoire International des Musées. 3. France—Musées et Collections d'Art, d'Histoire, d'Archéologie, d'Ethnographie, et d'Art populaire. 1933.

Annuaire des Musées Nationaux, 1934. Paris, 1934.

(3) By ALEXANDER O. CURLE, C.V.O., LL.D., F.S.A.Scot.

Reports of the Research Committee of the Society of Antiquaries of London. Nos. I.—X. Oxford, 1913–1932.

Old Sarum Excavation Fund. Reports of the Excavation Committee to the Society of Antiquaries for 1909, 1910, and 1911. Oxford, 1912.

Kanovium Excavation Committee—Excavations on the site of the Roman Fort at Caerhun. Fifth Interim Report. The Samian Pottery. (Reprinted from *Archæologia Cambrensis*, December 1931.) Cardiff, 1932.

Die Denkmäler des Römischen Köln. Band I. Berlin, 1928.

Catalogue of "The Celebrated Collection of Ancient Marbles, the property of the Most Hon. The Marquess of Lansdowne, M.V.O., D.S.O." Sold by Messrs Christie, Manson & Woods, 5th March 1930.

The Romano-British Site of Corstopitum (Corbridge, Northumberland). An Account of the Excavations during 1907–8 and 1909. By W. H. Knowles, F.S.A., and R. H. Forster, M.A. London and Newcastle-upon-Tyne, 1909 and 1910.

Reports on the Excavations in 1907, 1908, 1909, 1910, 1911, 1912, and 1914. Newcastle-upon-Tyne, 1908–1915.

The North of England Excavation Committee. Fourth Report for the Years 1931–1932.

Céramique Primitive. Introduction à l'Étude de la Technologie leçons professées à l'École d'Anthropologie en 1911. By L. Franchet. Paris, 1911.

Caer Llugwy. Excavation of the Roman Fort between Capel Curig and Bettws-y-Coed. By J. P. Hall, F.S.A. First Report. Edited by F. A. Bruton, M.A., Litt.D. Manchester, 1923.

Cymmrodorion Society's Publications. Segontium and the Roman Occupation of Wales. By R. E. Mortimer Wheeler, M.C., D.Lit., F.S.A. London, 1923.

(4) By Dr C. A. NORDMAN, the Author.

The Megalithic Culture of Northern Europe. The Rhind Lectures, 1932. Helsingfors, 1935.

(5) By Rev. JOHN STIRTON, M.V.O., D.D., F.S.A.Scot., the Author.
Stirton of The Stormont: a Brief History of the Family. Forfar, 1935.

(6) By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot., the Author.

Auchindoir, Rhynie, and Essie. (Reprinted from the *Transactions of the Banffshire Field Club*, December 1934.)

The following purchases for the Library were intimated:—

Some Fraser Pedigrees. By Duncan Warrand, M.A., F.S.A. Inverness, 1934.

Catalogue of Antiquities in the Museum of the Wiltshire Archæological and Natural History Society at Devizes. Part 2, 2nd edition. Compiled by Mrs M. E. Cunningham and Rev. Canon E. H. Goddard. Devizes, 1934.

Official Guides: —

Palace, Abbey Church, and Environs of Holyroodhouse. With a Historical Sketch. By the Rt. Hon. Sir Herbert Maxwell, Bart., K.T., F.R.S., LL.D., D.C.L. Edinburgh, 1934.

Inchcolm Abbey. By J. W. Paterson, M.V.O., M.B.E., A.R.I.B.A., F.S.A.Scot. Edinburgh, 1929.

Tantallon, East Lothian. By J. S. Richardson, F.S.A.Scot. Edinburgh, 1932.

Edinburgh Castle. The Buildings. By J. S. Richardson, F.S.A.Scot. History by Marguerite Wood, M.A., Ph.D. Edinburgh, 1933.

- Palace of Linlithgow. Description by J. S. Richardson, F.S.A.Scot.
History by James Beveridge, M.A. Edinburgh, 1934.
- Whithorn Priory. By W. G. Collingwood, M.A., F.S.A., and
R. C. Reid. London, 1928.
- Ancient Dwellings at Skara Brae. By Professor V. Gordon
Childe, B.Litt., F.S.A.Scot. Edinburgh, 1933.
- The Abbey of Sweetheart, the Stewartry of Kirkeudbright. By
J. S. Richardson, F.S.A.Scot. Edinburgh, 1934.
- The Castle of Dirleton, East Lothian. By J. S. Richardson,
F.S.A.Scot. Edinburgh, 1934.
- The Cathedral Kirk of Moray, Elgin. Description by J. S. Richard-
son, F.S.A.Scot. History by H. B. Mackintosh, M.B.E.,
F.S.A.Scot. Edinburgh, 1934.
- Guide to the Belgian Museums. By A. J. Delen and Rene Leclercq.
Antwerp. n.d.
- Celtic Ireland. By Eoin MacNeill, D.Litt. Dublin and London, 1921.
- The Desert Fayum. 2 vols. By G. Caton-Thompson and E. W.
Gardner. London, 1934.

The following Communications were read:—

I.

THE TARDENOISIAN MICRO-BURIN IN SCOTLAND.

By A. D. LACAILLE, F.S.A.Scot.

Although several communications on the Scottish Tardenoisian have appeared in our *Proceedings*, no recent contribution on the subject has been given to the Society. Of late, however, evidence has been forthcoming to throw more light on Scottish industries of Mesolithic facies. In view also of certain statements made regarding these industries it is opportune to record data now available.

Characteristics have been noted indicating that in the Tweed valley is generally represented a more ancient horizon than in Ayrshire. Comparison shows that on Deeside the appearance of the Tardenoisian collections assembled is similar to that met with in the different series from the Tweed valley. Inspection of the artifacts reveals forms present in England and on the other side of the Channel testifying to earlier craftsmanship than do the Shewalton group and similar industries

elsewhere, in which occur forms absent in the valleys of the two Scottish rivers mentioned. On the other hand it can be shown that the Ayrshire site has not yielded products found in what, in some places, may be regarded as an earlier Tardenoisian phase.

The stressing of the consistent absence of the *micro-burin* in Scotland and the presence of arrow-heads—although trimmed in a manner not in vogue in late industries—has apparently led to the deduction that the Scottish microlithic industries represent but a survival of Tardenoisian tradition even into the Bronze Age.¹

An authoritative work just published contains conflicting references to the occurrence of the *micro-burin* in Scotland, and one may possibly infer therefrom that only two of these typical pieces have so far been recorded from Scottish sites.² This calls for modification, as the writer at a meeting in London of the Prehistoric Society of East Anglia on the 25th May 1933 mentioned that, having inspected several Tweedside collections, a number of *micro-burins* had been noticed, although not recognised by their finders, probably on account of their unfamiliar aspect. Possibly, too, the collectors were influenced by the insistent suggestion that the *micro-burin* was an absentee from Scottish microlithic series. Nevertheless, it had previously been noted in the *Proceedings of the Prehistoric Society of East Anglia* that I had identified several characteristic specimens in Border collections.³ One in particular, a perfect example, of grey flint, found by Master Alex. N. G. Munro, and sent me with others picked up by his father, Dr W. A. Munro, F.S.A.Scot., was presented to the national collection and is exhibited in the Museum (fig. 1. No. 1). The case in which Scottish Tardenoisian implements are displayed contains some examples of notched flakes, the parents from which the typical *micro-burin* is derived. All these come from the Border counties, and it was with satisfaction I obtained lately what seems confirmation of similarity between Border and Deeside microlithic industries in the form of many typical *micro-burins*, discovered by Miss Hilda M. Leslie Paterson, F.S.A.Scot., in the neighbourhood of Banchory. Among the Scottish prehistoric specimens in the collection of the late Mr W. J. Lewis Abbott are two *micro-burins* of light flint from the Culbin Sands, Moray.

Four, for the permission to figure which I am indebted to the finder, will suffice to illustrate North-Eastern Scottish examples of *micro-burins*

¹ V. Gordon Childe, *The Prehistory of Scotland*, p. 20.

It must be pointed out here that the diminutive arrowhead from Shewalton, so strongly emphasised and described as barbed and tanged (*ibid.*, p. 20), has no barbs.

² *Ibid.*, pp. 16 and 20.

³ *Cit. supra*, vol. vii. pt. i. p. 129.

possessed of slight variations. all paralleled in well-known series of other regions (fig. 1. Nos. 2, 3, 4, and 5).

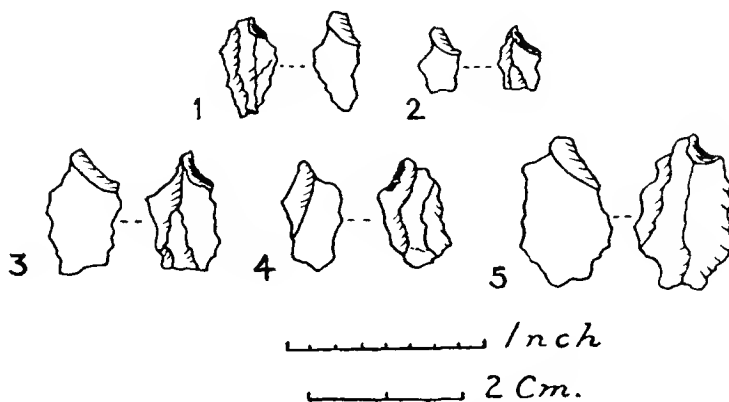


Fig. 1. Tardenoisian Micro-burins: No. 1. Dryburgh Mains, Berwickshire; Nos. 2-5, Birkwood, Banchory.

No. 2 is of Buchan rich brown flint, and Nos. 3, 4, and 5 of grey chalcadonic flint. In the case of No. 4, the only instance with the notch on the left, the edge of the characteristic hollow bears delicate trimming.

II.

AN ABERDEENSHIRE IRON AGE MISCELLANY: (1) STONE CIRCLE AT FOULARTON: (2) BRONZE TERRET FROM RHYNIE, AND DISTRIBUTION OF THE TYPE. By H. E. KILBRIDE-JONES, F.S.A.Scot.

1. STONE CIRCLE ON THE FARM OF FOULARTON, KINTORE.

In the neighbourhood of Inverurie there are the remains of four stone circles which were once of a common type—a type, that is, common to themselves, but apparently unique in the north-east of Scotland. All four circles have suffered virtual extirpation to satisfy an idle curiosity; but something yet remains of the circle at Broomend of Crichtie, which has been more fortunate than the remaining three of the type, and is therefore recorded.¹ The example which forms the subject of this note has suffered a less happy fate: when Coles visited it there was little to

¹ Best account is given by Ritchie, *Proc. Soc. Ant. Scot.*, vol. liv. p. 154. See also Dalrymple, *ibid.*, vol. xviii. p. 319.

indicate the former existence of such a monument, and time has not dealt lightly with what remains. The accumulation of new data provides the sole excuse for reconsidering the available evidence.

The stone circle at Foularton is said to have had a diameter of 28 feet, and to have consisted of six or seven stones.¹ Like the circle at Broomend, it had apparently been surrounded by a ditch.² "In the centre was a circular space immediately under the surface, 9 feet in diameter and marked by fire; and in the centre of this space was a grave, 5 feet long, 2 feet wide, and 2 feet 3 inches deep (1 foot being into the sub-soil). In this grave lay the skull and other bones of an unburnt skeleton. The grave lay east and west, and at the east end were fragments of an urn and incinerated bones. Around this central grave, in seven places, there were found deposits, some of which were protected by small stones built around them like circular cists, as at Broomend of Crichtie, and with flat stones above and below. In some of these were fragments of urns, and in small cists there were also fragments of urns found. In all the seven deposits, however, incinerated bones were found."³

This delightfully vague account is the inheritance of modern research. It is felt that, with so many "fragments of urns," there ought to be rather more extant than the thirteen sherds gifted to the National Museum more than half a century ago. It would also have added interest to this discussion had some note been taken of the localities of these fragments, and we should then have had something more specific than mere analogy with which to content ourselves. This indifference to the need of adequate recording is all the more lamentable since none of the sherds preserved are of the "usual well-known type belonging to the Bronze Age" as Coles imagined;⁴ instead, they may all be safely assigned to the Iron Age.

This pottery, therefore, at once assumes a new interest, chiefly because it was found within one of four stone circles belonging to a common type. One of that type is the Broomend of Crichtie circle, which has never been regarded as belonging to any other period than to the Bronze Age; the fact is indisputable. At precisely what period of the Bronze Age the Crichtie circle was erected is not very evident, although the finding of the unburnt skeleton in the central cist might give some hint of its antiquity. No less than two cinerary urns containing calcined human bone were found to have been deposited in front of the two remaining monoliths, whilst a third was found near a socket of another monolith long since removed.⁵

¹ Anderson, *Scotland in Pagan Times, Bronze and Stone Ages*, p. 108.

² Coles, *Proc. Soc. Ant. Scot.*, vol. xxxv, p. 218.

³ *Ibid.*

⁴ *Ibid.*, p. 219.

⁵ Ritchie, *loc. cit.*, p. 161.

The discovery of quantities of calcined bone elsewhere shows that the interior of the stone circle formed a regular burial-ground during the late Bronze Age.

With such evidence before us from Crichtie, we turn with renewed interest to the pottery from Foularton. Here the "excavator" was not so fortunate as to discover evidence consistent with a Bronze Age dating, but that does not imply that the stone circle must be unconditionally dated to the "Hallstatt" period¹ merely on the evidence of thirteen sherds of early Iron Age ware. There is the presence of an unburnt skeleton in the central cist, paralleled at Crichtie, with which to contend. It would be rash indeed to attempt an impossibility merely on the value of superficial evidence, especially since not only had others decided the matter for us,² but we had already convinced ourselves beforehand that the four stone circles of Broomend, Foularton, Tuack,³ and Cairnhall belonged to a type common to themselves. On the evidence from Broomend they were therefore all erected during some period of the Bronze Age.

But what of the discovery of potsherds of the early Iron Age at Foularton? The explanation is simple enough. We have already seen from the excavation of the Bronze Age recumbent-stone stone circle at Loanhead of Daviot that such monuments witnessed a succession of cultures, and continued in esteem well into the Iron Age.⁴ We have at last definite evidence of that fact, and there is insufficient grounds for assuming otherwise. In a country where people were acquiring new ideas by assimilation, there is no adequate reason why the dawn of a new age should herald the launching of an intensive campaign of megalithic building any more than it would be expected to sweep away entirely the old order of religious and social organisation. Such tenets as were possessed by the population of the late Bronze Age, in the absence of any all-devastating conquest from without, would tend to die slowly, and it is impossible to assume a megalithic revival in the absence of any definite reason for such a revival. Obviously, then, the stone circle at Foularton, like that at Loanhead of Daviot, continued in favour and in purpose at least as late as the early Iron Age.

We thus have a continuation of the Bronze Age tradition into the Iron Age from both a Recumbent-stone stone circle and from one not possessing that unique feature. We shall doubtless find, with further

¹ Cf. Childe in *Proc. Soc. Ant. Scot.*, vol. lxxvii, p. 37 *et seq.*, and vol. lxxviii, p. 372 *et seq.*

² Keiller, *Megalithic Monuments of North-East Scotland*, p. 5.

³ Dalrymple, *loc. cit.*, p. 324. The Tuack stone circle yielded three emery urns of the cordoned type.

⁴ Kilbride-Jones, *Proc. Soc. Ant. Scot.*, vol. lxi, p. 168.

scientific investigation of other sites, that the history of the stone circle was a long one, commencing in the early Bronze Age and extending well into the Iron Age, the concept of culture being the sole essential change throughout the passing centuries.

The thirteen potsherds from Foularton represent as many vessels. Amongst them are two rims (fig. 1, (1. 2)). The ware is very coarse: the paste seems to be of the usual quality associated with this type of pottery; but it often contains large pebbles, and the potter has not



Fig. 1. Sections of Iron Age Pottery from Stone Circle. (1.)

troubled herself with the smoothing away of small protuberances. The pots must have been roughly pinched into shape, finger indentations being common; and although many have been slipped, this has not been sufficient to hide the imperfections of manufacture. The sherds are mostly of different textures and colours; some are red, others are of a pale pinkish buff, rather reminiscent of certain ware from Ireland.

Rim No. 1 is of blackish-coloured paste containing small grit and one or two large pieces of stone. Fairly hard, pinkish buff on interior, with patches of bluish black on exterior, caused by excessive heat. Ware is slipped on both faces. Iron Age, Type 2, Period 2.

Rim No. 2 is black throughout, and consists of coarse paste as before, containing some fairly large pebbles. Both faces have been slipped, and interior is somewhat shiny. Iron Age, Type 4, Period 2.

2. OBJECTS IN THE POSSESSION OF MR ALEXANDER SHAND, LONGCROFT, RHYNIE.¹

The objects to be noted were collected by the late Mr W. Shand, farmer, mostly, it is believed, from his own farm and from local cottars and crofters. It may therefore be assumed that most of the objects were discovered within a restricted radius of Rhynie. To the west of the village, be it noted, is Tap o' Noth, the famous hill rising to close on two thousand feet in height. Crowning the summit is the well-known vitrified fort, below the ramparts of which, especially on the south side,

¹ I am indebted to Mr Mansfield D. Forbes for drawing my attention to these objects, and to Mr Shand for the facilities extended to me for their examination.

are numerous hut sites. They appear as crescents in the hillside, and sometimes a track may be observed linking several together. With such a fair-sized prehistoric village in the neighbourhood one may well expect to discover sporadic finds in the surrounding land.

(a) The bronze terret (fig. 2 (1)) is apparently unique of its kind.

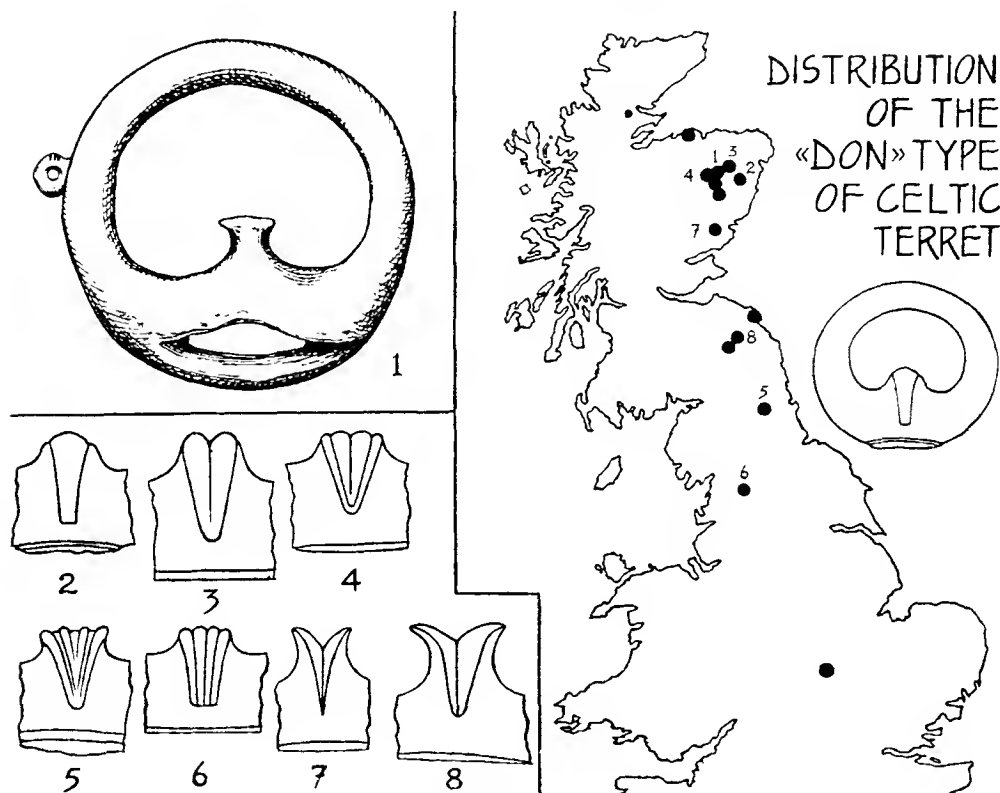


Fig. 2. Donside type of Celtic Bronze Terrets: No. 1 full size. Nos. 2-8 half size.

Three features distinguish it from most examples of this type of harness mounting: firstly, the small perforated attachment at the side; secondly, the curious manner in which the bar at the base, for mounting it upon the harness, has been provided; and, finally, the total lack of ornamentation. The purpose of the first of these features is not very clear: it consists of a small ring of bronze, cast on to the main ring and having about the centre thereof a small perforation. This perforation is so small as only to admit of a thread or of a thin wire to pass through it, and it may thus have served for suspending some embellishment therefrom. The second feature, the bar, has been fashioned in an interesting

manner. The ring for the most part is of even girth and cast solid; but the basal part, where there is a sudden expansion in girth, is found to have been cast hollow in such a way as to provide a splay which, from having a straight edge apart from the circumference, allows of free access to a bar. This bar, $\frac{3}{16}$ inch in thickness, apart from being part of the casting as a whole, also forms part of the circumference of the ring. Maximum strength is thereby given to the bar: but the idea is a clumsy one, and this terret seems to be a prelude to the forms discussed in the series below. Above the base, on the inside, is a plain projection. The third feature mentioned above will be referred to later.

The Rhynie terret belongs to a class of terret in which the ring is narrow in girth at the top, but gradually swells out as it curves round on both sides, until at the base it is perhaps twice as much in girth as at the top. The ring is usually, if not always, cast hollow, and on the under side is an oval opening concealing within it a bar, usually of iron and fixed in with lead. Above the opening in the base, on the inside of the ring, is a projection, which is usually ornamented in simple style, perhaps with no more than a vertical rib: but sometimes this projection increases in height and is bifurcated. Usually the sole variation in such terrets is the manner of treating this projection, and it therefore serves as a valuable indication of development, and gives some idea of the centre of origin of the type.

In regard to the distribution of these terrets, we have lately been nourished upon theories which will not bear the light of scrutiny. On the one hand, and with justification, the specimen from Crichtie, Inverurie ¹ (fig. 2 (2)), has been claimed to be of early type,² whereas elsewhere the whole class is claimed to be late,³ the argument advanced in support of the latter theory being that the iron bar concealed in the base has been run in with lead. This can hardly be claimed to serve as an argument at all for placing the terrets in any particular period, especially since some specimens do not possess an iron bar, but instead the bar is of bronze and forms part of the casting—such are the Sheelagreen example ⁴ and another in the National Museum without locality. Then there is the method adopted in the case of the Rhynie terret. It is thus obvious, as Mr Leeds admits, that the iron bar run in with lead will never serve as a sound criterion of date: neither will the presence of an iron bar in the decorated enamelled terret from the Fayûm ⁵ provide

¹ *B.M. Guide to Early Iron Age Antiquities*, p. 158.

² Callander, *Proc. Soc. Ant. Scot.*, vol. Ixi, p. 244.

³ Leeds, *Celtic Ornament*, p. 122.

⁴ Callander, *Proc. Soc. Ant. Scot.*, vol. xl, p. 33.

⁵ *B.M. Guide to Early Iron Age Antiquities*, p. 86; *Proc. Soc. Ant.*, 2nd series, vol. xx, p. 57. The Fayûm terret is probably of British origin.

sufficient excuse for assigning the type to the second or third centuries.¹ Such ideas, however, have occasioned more definite assertions elsewhere, and not only are we led to believe that the type is late, but the claim is made that it is of Northern English origin, and spread "even into Aberdeenshire."² A little research will serve to show how inept are such remarks.

On the question of date we have, unfortunately, very little to help us. Only four terrets were associated with other objects: that from Crichtie was part of a hoard, which also contained a bronze ferrule and several jet objects, which were probably the heads of iron pins;³ the two from the farm of Hillock Head, Towie, were found with numerous other bronze objects in a cairn, but the terrets alone were preserved;⁴ and the terret from the Roman supply base at Corstopitum was not thought of sufficient importance to merit any details of location and association.⁵ There is thus nothing by which it is possible to form any adequate opinion of date, and we must content ourselves by basing our arguments mainly upon the discovery of the last-named example at Corstopitum, a Flavian site, perhaps a castellum of Agricola.

In regard to the distribution of the type of terret under consideration, we find that we are limited to fifteen examples bearing localities from both Scotland and England. These are distributed over a fairly wide area as follows: Morayshire—one from the Culbin Sands;⁶ Aberdeenshire—one from Crichtie, Inverurie,⁷ one from Clova, Lumsden,⁸ one from Ballestrade, Cromar,⁹ two from Hillock Head, Towie,¹⁰ one from Sheelagreen, Culsalmond,¹¹ one from Rhynie; Angus—one from Kirriemuir;¹² Berwickshire—one from Eyemouth;¹³ Roxburghshire—one from Oxnam.¹⁴ In England one was found at Chesters, Northumberland,¹⁵ and another at Corbridge,¹⁶ in the same county; one was found at Giggleswick, Yorkshire;¹⁷ and, finally, one was found as far south as Billing in Northamptonshire.¹⁸ Of the total number eleven were found in Scotland, and no less than seven within a restricted area in Aberdeenshire. Such concentration within so small an area would seem to suggest certain implications.

The series begins with the terret from Crichtie¹⁹ (fig. 2 (2)). It is

¹ Leeds, *loc. cit.*, p. 122.

² Childe, *Prehistory of Scotland*, p. 231.

³ Callander, *Proc. Soc. Ant. Scot.*, vol. lxi, p. 243; *B.M. Guide*, p. 158.

⁴ Anderson, *Scotland in Pagan Times, The Iron Age*, p. 122.

⁵ Forster and Knowles, *Arch. Aetiana*, 3rd series, vol. vii, p. 46, pl. iv.

⁶ Callander, *Proc. Soc. Ant. Scot.*, vol. lxi, p. 244.

⁷ *Ibid.*; *B.M. Guide*, p. 158.

⁸ Callander, *Ibid.*, p. 246.

⁹ *Ibid.*, p. 246.

¹⁰ Anderson, *loc. cit.*, p. 122.

¹¹ Callander, *Proc. Soc. Ant. Scot.*, vol. xl, p. 33.

¹² Callander, *ibid.*, vol. lxi, p. 246.

¹³ "Roy, Comm. on Anc. and Hist. Monuments in Scotland." *Berwickshire Inventory*, p. xxxviii.

¹⁴ Callander, *loc. cit.* ¹⁵ Leeds, *loc. cit.*, p. 126. ¹⁶ Forster and Knowles, *loc. cit.*, pl. iv.

¹⁷ *Forks. Arch. Jour.*, vol. xxii, p. 237.

¹⁸ Leeds, *loc. cit.*, p. 126.

¹⁹ For the moment we are omitting the Rhynie terret from this discussion.

fairly certain that this must possess an immediate prototype, but it is as yet undiscovered. The Cricchie terret is ornamented in simple fashion; it bears on its projection a single vertical rib, which seems to suggest that this formed an experiment in ornamentation. Such a form of ornamentation offered several possibilities, so that we are not surprised when we discover that the single vertical rib has been expanded and divided into two sections (fig. 2 (3) in the example from Sheelagreen). Further expansion would be impossible without producing a projection of ungainly proportions, so other methods were resorted to for developing the ornamentation. The twin-sectioned vertical rib therefore remains the same, but it is now improved and embellished with a beaded edge (fig. 2 (4)), from Towie. All these improvements, be it noted, had taken place within a restricted area. Development proceeds apace, but the scene is now transferred to the south. At Corstopitum (fig. 2 (5)) we find that the divided vertical rib has now been pulled apart to form two narrow vertical ones, which are narrow only because the beading remains untouched except for a slight *retroussé* effect at the top. Such confinement apparently appeared both unwarranted and ugly to the craftsman who made the Giggleswick specimen, so he simplified the ornament into four vertical ribs of equal size (fig. 2 (6)).

It is thus obvious that the initial stages in the development of the ornamentation of the series of terrets under review took place upon Donside—a fact so striking, indeed, that we have been tempted to name the series the 'Don or Donside' type of Celtic terret. It is not until that development is well advanced that it is necessary to leave that area and turn southwards to see what subsequently happened. The lesson, therefore, seems obvious enough. We find confirmation of this southerly trend in the clumsy copy, from Oxnam (fig. 2 (8)), of the neat, northern, bifurcated projection upon the Kirriemuir specimen (fig. 2 (7)). There is even a further degraded example of this form in the National Museum, but unfortunately without locality. This eccentricity in decoration, that is by bifurcating the projection, was probably suggested by the divided vertical rib, possibly of some example similar to that from Sheelagreen (fig. 2 (3)).

The above considerations make it possible that the Rhynie terret might be the earliest example of the type yet discovered. It is obviously far removed from any others that have come under consideration, not only because of its several unique features, but because of its remarkably small size. It measures only $1\frac{13}{16}$ inch in greatest diameter, and, taking the bar as part of the circumference, the ring forms an almost perfect circle. The remaining terrets are large in comparison, the smallest

being the Crichton specimen, which is $2\frac{7}{8}$ inches in greatest diameter, and they are mostly oval in shape. In addition, all are free of attachments, with the possible exception of the Sheelagreen terret. Mr A. O. Curle has drawn my attention to the "two small holes broken in the upper and thinner part of the ring."¹ It will be noticed that both holes are equidistant from the central vertical axis, so that it would be safe to infer that these holes represent the positions of attachments to the ring. Mr Curle is of the opinion that these attachments probably took the form of decorative knobs rather than of small plates such as the Rhynie example possesses. This attachment of decorative knobs might have been suggested by the pierced one on the Rhynie terret, an idea which probably by this time had long been out of date. We thus seem to be well on the way to establishing Donside as the centre of this development.

There only remains the necessity of hazarding a few remarks in regard to the date of the Donside type of terret. Let it be understood at once that we profoundly disagree with the notion of assigning to the type a second or third century date as suggested.² Were we to presume that they belonged to such a period we would expect to find at least a single specimen at Traprain Law, a site which yielded no less than ten terrets of other forms, since it was during this period that the hill camp was enjoying a time of comparative prosperity. The abundance of Roman ware of the second century testifies to that fact. Yet we look in vain for anything in the nature of the Donside type of terret, and, presuming it to have flourished at this period, it seems hardly possible that the people of Traprain should remain ignorant of its form when others in the north-east and in the Border regions were fully acquainted with the type. A specimen or two would also be expected from our earth-houses, since such structures are numerous in the north-east. But we have not far to look for the explanation. If we assume that the terret from Corbridge arrived there during the Flavian period, the matter adjusts itself. There would still be the possibility of finding a specimen at Traprain Law; but, on the other hand, we would not be surprised at its absence at this date, and the reason for the absence of the type from our earth-houses is self-evident. Such considerations tend to place the Aberdeenshire specimens in an even more remote period than would be suggested by the distribution of the type in the Lowlands.

However, in spite of meagre data, we can fairly claim to have established three facts: (*a*) that the type originated in the north-east of Scotland; (*b*) that it is an export to England; (*c*) that an earlier date is more suitable in view of the available evidence. Probably in the north-

¹ Callander, *loc. cit.*, vol. xl. p. 34.

² Leeds, *loc. cit.*, p. 122.

east the Donside type of terret would belong to the first century before Christ. At least it seems hardly possible that it could be later than the first half of the first century of our era.

(b) Included in Mr Shand's collection are three beads. The first, a fine one of clear amber, was found in a moss at the foot of the Tap o' Noth whilst casting peats.

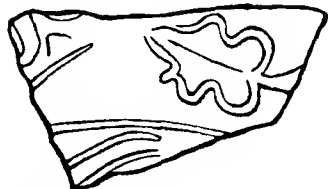


Fig. 3. Samian Ware from neighbourhood of Rhynie, Aberdeenshire.

It is in the form of a circular ring, $1\frac{1}{3}\frac{3}{2}$ inch in diameter and nearly $\frac{1}{2}$ inch in thickness, having a central hole $\frac{1}{3}\frac{3}{2}$ inch in diameter. This hole is slightly irregular, and has a counter-sunk appearance on either side of the bead. It has obviously been made subsequent to the shaping and smoothing of the bead as a whole.

The second bead, which is of glass, is a black triangular specimen, $\frac{2}{3}\frac{1}{2}$ inch from tip to tip, with yellow spiral decoration at the apices, the apices here being flattened to such an extent as almost to give the bead a six-sided appearance. Such beads are of common occurrence in the north-east. The third bead is of turquoise blue, $\frac{7}{16}$ inch in diameter.

(c) Also in the same collection are three sherds of Roman ware—two of decorated Samian and one of a plain grey ribbed pottery. None bears any locality. The nearest Roman camp was at Glenmailen, a temporary marching camp of short occupation, about fifteen miles distant. One sherd of Samian here illustrated (fig. 3) bears upon it a fig leaf, and in the top left-hand corner the hind leg of some animal and a portion of the tail, perhaps those of a lion.

III.

THE CAIRNMUIR GOLD TERMINAL: A PARALLEL, AND A POSSIBLE EXPLANATION OF ITS USE. BY JOHN D. COWEN, M.A., F.S.A.

For the enigmatic object in gold with chased Celtic ornament, from Cairnmuir, Peeblesshire, now in the National Museum of Antiquities of Scotland (FE 46, fig. 1), several uses have been suggested. But in

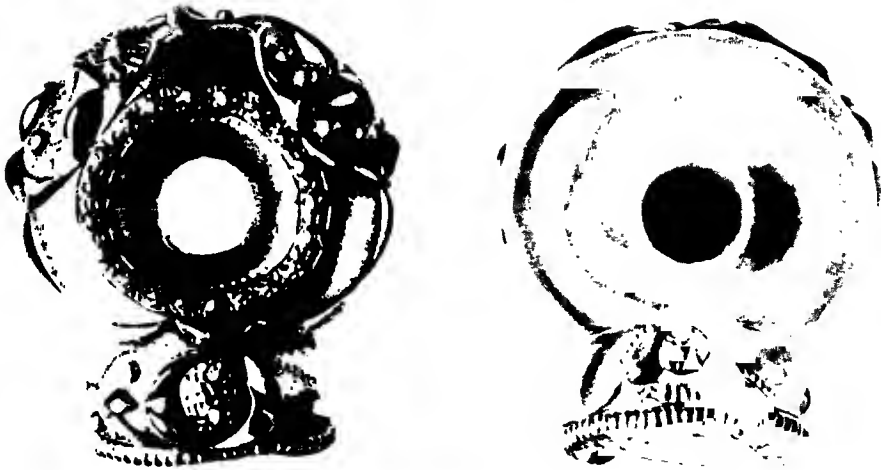


Fig. 1. Gold Object from Cairnmuir, Peeblesshire: front and back. (†.)

the total absence of comparative material such suggestions can rank no higher than guesses, and, so far as I am aware, for the quite distinctive form of this notable piece no one has yet succeeded in bringing forward a parallel. In British archaeology it stands unique. It is the object of this note to illustrate a find from foreign soil which does offer a marked similarity of form, and which may afford an explanation of its original purpose.

The features in the Cairnmuir ornament to which attention may be specially drawn are its loop-form with circular outline, set on a substantial hollow cupped base: the small central hole with markedly smooth, funnel-like entrance; the emphasis on the junction between

this funnel and the outer surface of the loop: and, by contrast with the smooth surface of this inner face, the broken appearance and heavily ornamented character of the outer surface.

Now in the National Museum of Antiquities of France, St Germain-en-Laye, there is preserved a find remarkable for more reasons than those that are relevant in this place. It is little known, and has not, I believe, been published. Its provenance is, unfortunately, not well recorded,

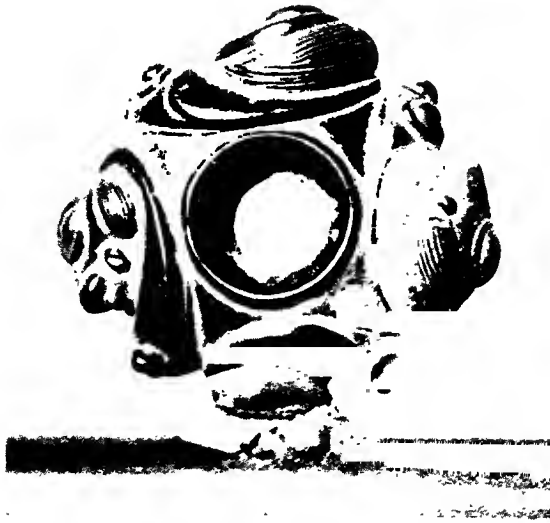


Fig. 2. Bronze Terret from France. (c. [?])

for it is said simply to have come "from the Champagne." Such a locality is on general grounds probable enough, though it is clear that for the inspiration of the fantastic designs on the component pieces we must look rather to the central Rhenish area. Both in conception and in execution this ornamentation is at home in the *milieu* of the rich material culture and bizarre artistic tradition of the Celts who, in the period of La Tène I., were responsible for the burials of Rodenbach, Waldalgesheim, and Weisskirchen.

Our concern, however, here is not with artistic, but with more practical considerations. The Champagne find consisted of the four following pieces:—An object of uncertain use, probably connected with the harnessing of a chariot;¹ a small detached fragment in the form of a human

¹ It is reminiscent of the enamelled huch-pin from Nanterre (Déchelette, *Monet*, vol. ii, part 3, fig. 502, 7), and still more of the somewhat similar object from the chariot-burial of Leval-Trahegnies, Hainault (De Loë, *Belgique Ancienne*, vol. ii, fig. 108, 6 and 7).

head: and two *terrets*, whose resemblance to our Cairnmuir ornament is surely too striking to be accidental (figs. 2 and 3).¹ Here again we have the loop-form on a base: the smooth central hole sharply demarcated from the remainder of the surface; the broken outline and heavy ornamentation of the exterior face. Here surely there is a connection, if not directly in point of style, yet plainly at all events as to purpose.

For this reason it becomes necessary to examine the evidence on which is determined the character of the two Champagne pieces as *terrets*. Apart from the general appearance of the find, which seems of itself to suggest the remains of a set of harness, and which in this respect so closely agrees with the character of other such finds on Celtic territory, there is the conformation of the looped objects themselves, from which it is not a long step to the developed *terrets* of later times. We have, further, the characteristic formation of the attachment, the runner between two large covering flanges (more particularly marked in fig. 3), which had a long life on foreign soil,² and appears at times in our own country.³ Finally, it may be observed that in these two pieces, so like in general form, yet not a pair, we seem to have the elements of a full set of Celtic harness to the making of which, as Mr Leeds has shown,⁴ went *terrets* of two distinct sizes.

The Rhenish material suggests that the Champagne find is of the



Fig. 3. Bronze Terret from France. (c. $\frac{1}{2}$.)

¹ I am much indebted to the authorities of the Museum of St Germain-en-Laye, and in particular to Dr Françoise Henry, for supplying me with photographs of these objects. It is, perhaps, as well to observe that for purposes of photography the two *terrets* have been mounted on lumps of plasticine.

² See, for example, *Préhistoire*, II, p. 107, fig. 22, 3; but the type is very common.

³ An excellent example is in Ilkley Museum, from the Roman site there. The same style of attachment is also found on occasion on objects other than *terrets*, e.g. on an ornament from Brough (British Museum).

⁴ *Celtic Ornament*, pp. 121-2.

period of La Tène I., though a late phase of the period may be suspected. This is borne out by the very close resemblance between the treatment of the ornament on one of the terrets (fig. 3), and the bracelet from Bavaria illustrated by Déchelette,¹ and picked out by him as characteristic for La Tène II. So that perhaps, after all, full La Tène II. is the correct dating. But in either case, if the two pieces in question be accepted as terrets (and the authorities in whose charge they are do so accept them), we are in the presence of the earliest terrets hitherto recognised north of the Alps.

Is, then, the Cairnmuir ornament a Celtic terret? In such a claim, to be sure, there are at first sight certain difficulties, but on a closer examination, and in view of what we now know, some of these must disappear, while none remains insuperable. The obvious objection that the hole is too small to take the reins no longer holds good. We may, if we care, point out that it was only necessary to pass one rein through each terret, not two as is sometimes supposed,² and that the careful construction of the hole, with its polished sides, would to some extent compensate for the small size of the hole itself. But arguments like this are unnecessary in face of the Champagne examples which prove that, as a fact, the Celtic peoples quite certainly did use terrets with holes smaller than one would to-day have believed practicable, and smaller even than that in the Cairnmuir piece.

Another objection might be found in the fact that the attachment at the base of the object can no longer be seen. But on any view of its purpose we cannot avoid the inference that some such means of attachment must have existed once, and have now perished. The recessed runner is a familiar feature of later terrets in this country, where it seems to have been the counterpart of the form with a flange on each side already mentioned as characteristic of the continental development. Attention may also be drawn to the form of the attachment in certain unusual pieces from Stanwick, one of which is illustrated in the *British Museum Guide, Early Iron Age*, fig. 157. These are, in general form, linch-pins, not terrets, but their peculiarity consists in their having a small terret-like termination to one end of the pin, the junction between pin and "terret" showing a humped formation, circular on plan, very similar to what we see in the Cairnmuir example. The latter is, of course, too large ever to have been the terminal of a linch-pin, and the Stanwick

¹ *Op. cit.*, fig. 442, 5; and pl. xi. 7.

² A convincing demonstration of this point is to be found in Lindenschmit's *Allerthümer*, vol. i, part 2, pl. v, Nos. 1 and 2, where are figured portions of two sets of harness with the terrets still attached to them *in pairs*. These objects were found in Italy, and are in the Museum at Wiesbaden. I am indebted to Dr J. G. Callander for drawing my attention to this interesting reference.

pieces are in point rather as illustrating the existence on terret-like objects of a form of attachment which it is difficult to parallel at all, and which has not yet been pointed out on any of the recognised forms of terret.

Perhaps the most serious difficulty arises from the material and construction of the piece. By contrast with the extremely heavy solid bronze castings of the Champagne find here we have a hollow object, of no very substantial character, formed of a metal at once precious and unpractical. And it is a question whether it could ever have stood the strain of use. More than one explanation is, however, possible. In the first place the construction of this ornament, as inspection shows, is anything but flimsy. It is not worked in gold foil or plate, but is a casting to which the finish has been applied, first with the hammer, and then with the graver. And though the finish of the interior shows that it can never have had a filling, nevertheless there is a considerable thickness of metal, and from this, supported by the tubular construction, one obtains an impression of no mean strength. It may be that here we have part of a harness designed for use on ceremonial occasions, when violence of action was not contemplated, and the maximum of display was an obvious advantage. With such an idea the quality of the material fits remarkably well. On the other hand it may never have been intended for practical use at all. In that case we may think of it as possibly part of a harness dedicated by way of offering to some deity, or maybe one intended for the personal use of a god, that is, in a ritual sense, and on no mortal horse.

If this line of argument be accepted we may claim to have explained a piece, the use and character of which have long been a standing puzzle, and at the same time to have established the Cairnmuir gold ornament as typologically, if not in point of date, the earliest of all terrets known from British soil. Since on present views the character of the ornament precludes a high dating, we may perhaps explain the persistence of this early form in the light of the ritual possibilities suggested above as a part of the conservatism inseparable from religious practice.

If, on the other hand, the suggestion now put forward is not acceptable, this striking resemblance between objects in themselves of such outstanding interest seems at least relevant to future discussion, and worthy to go on record.

IV.

THE CASTLES OF DUNNIDEER AND WARDHOUSE. IN THE GARIOCH. ABERDEENSHIRE. BY W. DOUGLAS SIMPSON, M.A., D.LITT., F.S.A. SCOT.

Dunnideer is an elongated hogsbacked hill, with its long axis lying E.S.E. by W.N.W., about a mile west of the town of Inch. in the upper Garioch. Rising abruptly to a height of 876 feet, the hill is rendered conspicuous (fig. 1) by the single, lofty, and shattered wall of an ancient



Fig. 1. Dunnideer. General view from east.

castle that crowns it. This wall is pierced by a large ruinous window, forming a strikingly picturesque object which is seen over a wide extent of country. On a closer inspection, the old tower is found to stand within the wall of a vitrified fort, beyond which again is an earthwork rampart with a ditch on either side. The whole thus forms one of the most remarkable archaeological *ensembles* in the north of Scotland.

The tower (plan, fig. 2. and figs. 3 and 4) has measured about 38 feet

in length by 29 feet in breadth, within walls 6 feet 3 inches thick. On the outer face of the west wall, which stands to a height of over 30 feet, there is a splayed plinth about 3 feet above present ground level, carrying the face 9 inches back. Remains of a narrow window with splayed jambs exist at the basement level in the east and west walls: the latter window has its ingoing crudely arched. The great window on the upper floor on this side, already referred to, has a pointed rear-arch, well though roughly formed in small flat stones; but its original shape below the arch is obscured by modern repairs. The masonry consists of excellent well-coursed rubble facings, with a core of pebbles grouted in run lime. Where this masonry has been patched, pinnings are freely employed, but on the undisturbed faces these are absent and the rounded or subangular pebbles are closely compacted together with flat chips bringing up to course—a mode of

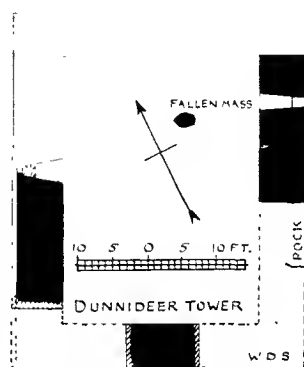


Fig. 2. Dunnideer Castle: plan of tower.



Fig. 3. Dunnideer Castle: view of tower from east.

building which with the regular coursing produces in the general effect a markedly striated texture. On the west and north inner sides the lower 9 feet of the facings have been peeled, and the walls have subsequently been refaced to a height varying between 3 and 6 feet.

At the south end of the broken west wall, and partly caught up by modern underpinning, are eleven courses of dressed yellow freestone at the first floor level (seen to the left in fig. 4), every alternate stone being a cloured-away tusk, while the others are set to a uniform vertical line. The only probable explanation of this is that there has been a garderobe or some such projecting structure at this point.



Fig. 4. Dunnideer Castle: view of tower from west.

The appearance of the tower in 1788, when a great deal more of it was standing, is shown by a good etching in Adam de Cardonnel's *Picturesque Antiquities of Scotland*. This tower stands at the west end of the vitrified fort, which forms (plan, fig. 5) a rectangle with curved corners, measuring about 230 feet by 85 feet interiorly. In most places the vitrification has been very thorough. The largest remaining mass (fig. 6), on the north side near the tower, is 22 feet in length, 9 feet thick, and 7 feet in height. I found a fine piece of the melted stone showing

seven distinct impressions of charred wood, several of which are cut ends. The vitrified material was chemically examined by Mr Charles Proctor, who pronounced it to be composed of the same granite out of which the hill is formed.¹ At the east end a bank seems to mark the position of a cross-wall cutting off the curved end of the fort; but whether this cross-wall is prehistoric or connected with the mediæval castle it is impossible to say. At a distance of 36 feet beyond this east end a curved cross-ditch is drawn athwart the hogsback; it measures 29 feet broad and is now about 3 feet deep and appears to be traversed by a causeway of access.

The earthwork fortification (plan, fig. 5) encircles the hill at a distance

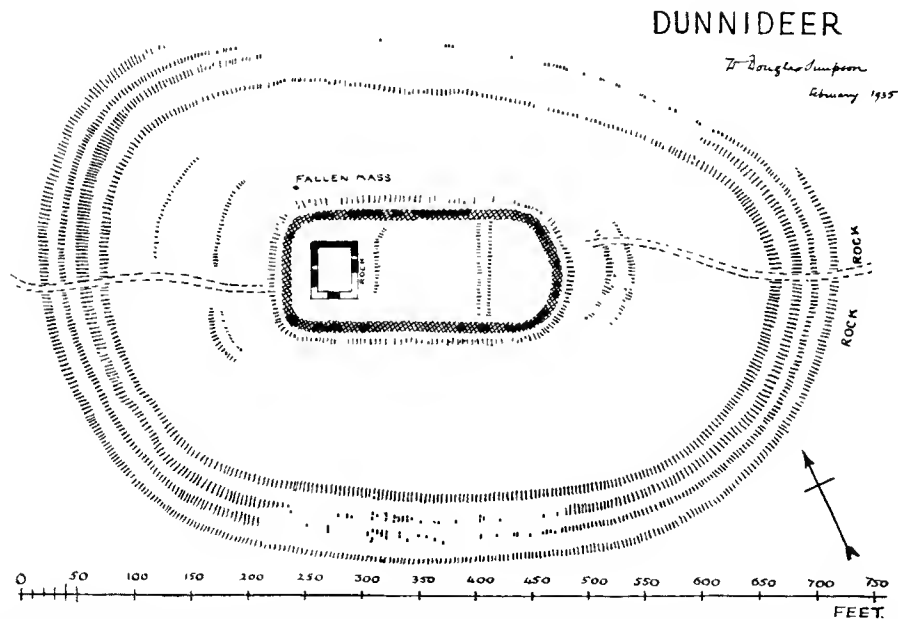


Fig. 5. Dunnideer. General plan showing mediæval tower, vitrified fort, and earthworks. (The line of the vitrified rampart is shown by cross-hatching; portions of vitrification cropping out *in situ* are tinted black.)

of roughly one-third below its summit, and encloses an egg-shaped area measuring about 600 feet in length and 360 feet in greatest breadth. It consists of a central bank between two ditches. These earthworks are most conspicuous at the two ends (fig. 7), and on the north side they are now reduced to a mere track along the hill. So far as surface appearances go, the chief dimensions (taken at the west end) are as follows:—

¹ See J. Macdonald, *Place Names in Strathbogie*, p. 52.



Fig. 6. Dunnideer. Vitrified mass *in situ*, on north side of fort close east of tower.



Fig. 7. Dunnideer. View of inner ditch and rampart at west end, looking outwards.

Basal breadth of rampart, 28 feet.

Height of rampart above present *solum* of outer ditch, 8 feet.

Breadth of inner ditch, 9 feet.

Breadth of outer ditch, 14 feet.

The earliest scientific description of Dunnideer occurs in a remarkable paper on vitrified forts published by James Anderson of Monkshill in

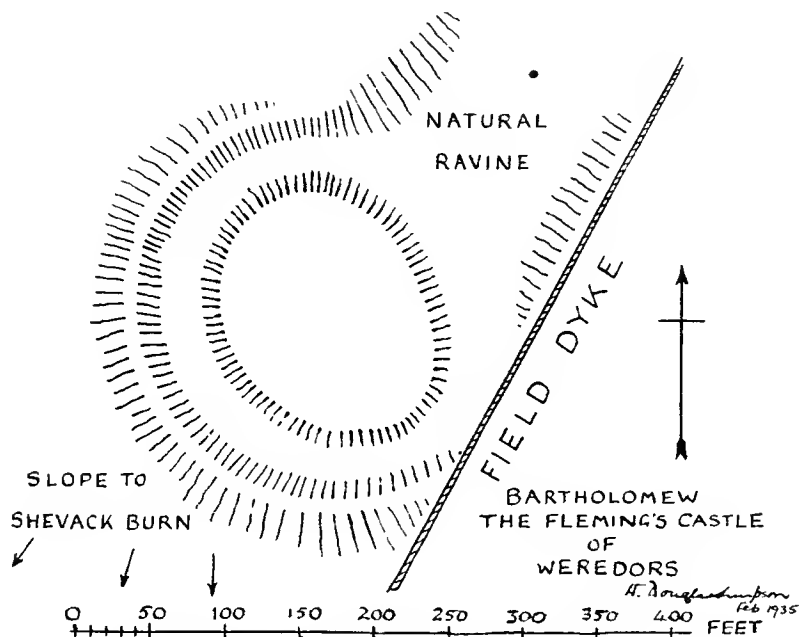


Fig. 8. Plan of moated homestead at Wardhouse.

Archæologia, vol. vi (1792), pp. 88–95.¹ In this account, which is illustrated by a sketch plan and three drawings, reference is made to a still lower line of circumvallation, of which no trace appears now to be visible, though there is a slight terrace on the north flank which may have given rise to the idea of a lower rampart. The large hollow marked G on Anderson's plan, outside the west end of the earthwork rampart, still exists. Possibly it is a quarry out of which stone for the tower was dug.

At the western foot of the hill are the earthwork remains of the old castle of Wardhouse (fig. 8). They form a typical example of a Norman *motte*—or rather perhaps a homestead moat, as there is no indication of the area within the ditch having been much mounded up above the

¹ Anderson republished this account, with the plans and engravings poorly reproduced on a reduced scale, in his periodical *The Bee, or Literary Weekly Intelligencer*, vol. x, pp. 206–12, 274–8 (August 15 and 29, 1792).

surrounding level. The area is roughly oval, measuring about 176 feet in length and 140 feet in breadth, and is enclosed by a ditch about 60 feet wide, with an outer rampart. On the east side both ditch and rampart are obliterated. Immediately north-east is the farm of Mains of Wardhouse, representing the old demesne or mensal lands of the castle, from which the lord's table was supplied.

The earliest reference to Dunnideer Castle that I have met is in a note of an agreement, dated 1260, which is preserved in the Chartulary of Lindores. That great Tironensian abbey was founded in 1178 by David, Earl of Huntingdon and of the Garioch, brother of William the Lion. By him it was endowed with the revenues of eight parishes in his northern earldom, including Inch, in which Dunnideer is situated. The agreement referred to was made between the Abbot and Convent of Lindores and Sir Gocelin or Josceline de Balliol, lord of Dunnideer, and brother of Sir John de Balliol, husband of Dervorgilla, lady of Galloway, the founder of Balliol College, Oxford, and of Sweetheart Abbey within her own domain. Dervorgilla was a granddaughter of David, Earl of Garioch, and this is clearly the reason why the Balliol family had obtained an interest there.¹ The agreement mentions that Gocelin held "his lands in Garviach . . . of the gift of Sir John de Balliol, his brother." It narrates that "the aforesaid Sir Gocelin, for himself and his heirs, has given and granted in free and perpetual alms a free intercourse from the Ouri [River Ury], measuring four feet and a half in breadth, as far as the mill of Inchemabani [Inch], by the middle of the land which he has on the east of his castle of Donidor," on condition that "the aforesaid Abbot and convent shall give to the aforesaid Sir Gocelin and his heirs a pair of white gloves every year at Whitsunday at his castle of Donidor, in lieu of all service, exaction, suit, and secular demand."²

Somewhat earlier in the same century we meet, also in the Lindores Chartulary, with our first mention of Wardhouse, in a deed whereby Bartholomew the Fleming "grants to the church of St Drostan of Inchemabani a toft and two acres of arable land adjoining the toft in his vill of Rauengille between the great road and the moor towards Gillandreston"³ . . . He declares that he has given his faith and bound himself and his heirs that the church of Inchemabani shall suffer no injury and

¹ See *Chartulary of the Abbey of Lindores*, ed. Bishop Dowden, pp. xxv-xxvi.

² *Ibid.*, pp. 152-5. By the Water of Ury, what is now called the Shevack Burn is meant; what is now known as the upper course of the Ury, flowing through Culsalmund, was anciently called the Glen Water (emerging from the Glen of Foudland). The Shevack Burn is called the Burn of Inch in Anderson's plan.

³ Now Glanderston, west of the Wardhouse Castle site. Ravengill does not now appear to be known.

lose none of its rights by reason of his chapel which he had made by leave of the Abbot and convent of Lundors (as contained in the charter in his possession) for the use of himself and his household [*privata familia*] only.”¹ This deed is titled in the chartulary “De Capella de Weredors.” It therefore affords the most satisfactory proof that the moated homestead at Wardhouse was the residence of Bartholomew the Fleming; and we are greatly interested to find that these earthwork castles were introduced by the Flemish colony which is known to have been settled in the Upper Garioch in the thirteenth century.² Sir Bartholomew Fleming appears in later writs, one dated 1253; and others of his family—Edward, Everard, and Simon—are on record in the same chartulary.³

I have found no further mention of Dunnideer Castle until the fifteenth century, when John Hardyng, in his diagrammatic map of Scotland, made about 1465, shows the “castells of Strabolgy, of Rithymay, of Dony Dowre,” and mentions Dunnideer as one of the places where King Arthur was said to have held his court:

“He held his houshold and the rounde table,
Some tyme at Edinburgh, some tyme at Striueline,
Of kynges renomed and most honourable,
At Carleile sumwhile, at Alelud his citee fyne,
Emong all his knightes and ladies full femenine;
At Bamburgh also, and Ebrank citee,
At London, at Wynchester, with greate royalte.

“At Carlion, Cardif, and Aualyne;
In Cornwaile also, Douer, and Cairelegion;
And in Scotlande, at Perth, and Dunbrytain,
At Dunbar, Dumfrise, and Sainct Johns towne,
All of worthy knightes moo then a legion,
At Donydoure also, in Murith region,
And in many other places both citee and towne.”⁴

When in 1562 Queen Mary restored the Earldoms of Mar and Garioch to John, Lord Erskine, as representative of the ancient Celtic line, it was decreed in her charter, dated from Perth, June 23, 1565, that the Castle of Dunnydure, as the capital messuage of the latter earldom, should be the place where sasine was to be taken.⁵ With this its authentic history appears to cease.

¹ *Chart. Lindores*, pp. 65–6.

² This Flemish colony has left its name in the farms of New Flinder, Little Flinder, and Old Flinder, westward from Dunnideer and Wardhouse. In the reign of Alexander III. the spelling is Flandres (*ibid.*, p. lxxv. and ref. in index). For the Flemings as introducers of *motte*-castles, cf. W. Mackay Mackenzie, *The Medieval Castle in Scotland*, p. 27.

³ *Chart. Lindores*, pp. 4, 8, 18, 91, 146, 184.

⁴ *Facsimiles of National MSS. of Scotland*, pt. ii. No. lxix; *The Chronicle of John Hardyng*, ed. H. Ellis, pp. 126–7, 417–8.

⁵ *Registrum Magni Sigilli*, 1546–80, No. 1637.

During the fifteenth century, when the Earldom of the Garioch was in crown hands, the mill of Dunnideer is on record in the Exchequer Rolls between 1461 and 1484¹; it also appears in charters granted to Leslie of Wardhouse in the years 1508, 1511, 1557, and 1596.² In 1610 the lands and Mill of Dunnideer were granted to George Currou of Inchdrewer, and in 1617 they were sold by Peter Blackburn, son of the Bishop of Aberdeen, to William Buchan, merchant-burgess of Aberdeen; but in the same year the teind sheaves of the lands and mill were assigned to John Leslie of Wardhouse. In 1629 the Erskines, as titular Earls of the Garioch, appear to have made an effort to resume possession. In 1650 the teind sheaves are granted to Thomas Gordon in Kethokismylne and Catherine Leith his spouse; and in 1654 Cromwell as Lord Protector gifted them to Sir Robert Farquhar of Monny.³ In 1665 Alexander Skene of Dyce obtained the royal confirmation of a grant from his father Gilbert of Dunnideer with other lands in the Garioch.⁴ In 1684 John Tyrie is served heir to his father David in the lands of Dunnideer,⁵ and the family held it until after 1724, when they were succeeded by the Leslies of Overhall, from whom it passed to the Wardhouse Gordons. The Tyries of Dunnideer are said to have lived in a house by the Shevack Burn, on the south side of the hill.⁶

The legendary history of Dunnideer has been remarkable. We saw that in the fifteenth century popular tradition connected it with King Arthur. Even before that time John of Fordun claims it as the place where "King Gregory" died in the ninth century.⁷ Fordun's "Gregory" is the literary ghost of the historical Giric, King of Alba, who reigned from 878 to 889, and died not at Dunnideer but (as earlier writers tell us) at Dundurn, the old capital of Fortrenn.⁸ The confusion due first to Fordun was repeated by Boece and subsequent writers. To Boece apparently must be ascribed the credit for the famous yarn about "Dunidor, the hill of gold," where the teeth of sheep pasturing on its slopes took on a golden hue from the rich ore beneath the turf.⁹ This story was amplified by various later authors.

The existence of specific documentary evidence about Dunnideer

¹ *Exchequer Rolls*, vols. vii and ix, ref. in index.

² *Reg. Magni Sigilli*, 1424-1513, Nos. 3242, 3556; 1546-80, No. 1196; 1593-1608, No. 508.

³ *Ibid.*, 1609-29, Nos. 289, 1650, 1735; 1620-33, No. 1477; 1634-51, No. 2191; 1651-9, No. 257.

⁴ *Ibid.*, 1660-8, No. 776.

⁵ *Ant. Aberdeen and Banff*, vol. iii, p. 403.

⁶ Sir Andrew Leith Hay, *Castellated Architecture of Aberdeenshire*, p. 22.

⁷ *Scotichronicon*, ed. W. Goodal, vol. i, p. 197.

⁸ See A. O. Anderson, *Early Sources of Scottish History*, vol. i, pp. 364, 367, 368, 397.

⁹ *Scotorum Regni Descriptio* (Introduction to Boece's *History*), Paris, Ascensius, 1527, folio xi, verso. (For the explanation of the story see Prof. Ritchie's note *infra*.)

Castle as a stronghold of the Balliols in 1260 at once raises the interesting question: how shall we correlate this evidence with the *befund*, to use an untranslatable but extraordinarily convenient German expression? The site of the castle on the hill top seems quite unsuitable for a *motte*, nor is there the slightest evidence that any such thing ever existed. Can the stone tower therefore be the veritable remains of the *castrum de Donidor* of 1260? Unfortunately, no distinctive architectural detail survives to help us solve this problem. The masonry has the close-packed striated character common in the earliest Scottish rubble-work, and is certainly quite unlike the normal slack texture of building in use in the north-east during the fifteenth and subsequent centuries. It has considerable resemblance to the masonry of Coull Castle, undoubtedly a thirteenth century building,¹ and also to that in the curtain wall of Balvenie Castle, which may well be a survival of the Castle of Mortlach on record in 1304.² Further afield, another close masonry resemblance, from the end of the thirteenth century, may be quoted in Lochindorb Castle.³ All these parallels point to a very early date, and therefore it seems to me that we should not exclude the possibility of the present remains at Dunnideer being part of the castle existing in 1260. If this be so, they may well be the earliest authenticated example of a tower-house in Scotland.

As to the castle of Wardhouse, from *circa* 1465 to *circa* 1650 it belonged to a branch of the Balquhain Leslies: Sir William Leslie of Balquhain grants a charter from Wardres on May 23, 1453.⁴ Subsequently it was in the hands of the Farquharsons of Invercauld, from which in 1730 it passed to James Gordon of Beldorney, ancestor of the present family of Gordon of Wardhouse. In 1647 the castle was unsuccessfully defended in the royal cause by "young Harthill" against General Leslie. Writing to the Committee of Estates on March 27, the General reports: "Vpon 25th instant Wardhouse was reduced without much disput, wherein were fourteen Irish and a captain—all which I caused to be put to death, and left a sergeant there with twenty fyue men."⁵ A manuscript account of the castle, drawn up about the end of the eighteenth century, says: "It had been built on a rising ground, in a valley between two hills,

¹ *Proceedings*, vol. lviii, pp. 45-99.

² *Ibid.*, vol. lx, 132-48; vol. lxiii, p. 126.

³ *London Morayshire Club Magazine*, new series, No. 4 (1931), pp. 33-42.

⁴ *Coll. Aberdeen and Banff*, p. 541. A genealogy of the Wardhouse Leslies is given by A. and H. Tayler, *Aberdeenshire Valuation Roll of 1667*, p. 121. In 1446 Menkle Wardres was in the hands of Sir William Forbes of Kinaldy (*Ant. Aberdeen and Banff*, vol. iii, pp. 404-5).

⁵ See W. Fraser, *The Melvilles, Earls of Melville and the Leslies, Earls of Leven*, vol. ii, p. 96; cf. W. Gordon, *History of the Ancient, Noble, and Illustrious Family of Gordon*, 1727, vol. ii, pp. 530-1. He gives the number of Irish hanged as 16. A traditionary account of the siege is given by Dr John Davidson, *Inverurie and the Earldom of the Garioch*, p. 290.

upon the water of Shevock. It has had a moat of water round it. The ditch may still be traced, but the castle is in ruins. It is said to have been a high house, but of little breadth or length. The walls had been very thick, and formed of rough stones, with very few windows, and of the narrow slit kind. The lowest flat had been arched. The entrance to it had been a drawbridge: it had been incapable of containing many men. There was a new house built beside the old castle, about 80 or 90 years ago; but it is in ruins also.”¹

The quaint little pack-bridge which still crosses the Shevack Burn opposite the old castle site, and at present leads from nowhere to nowhere, is evidently contemporary with the later stone castle, to which it had afforded access. The voussoirs of the arch are neatly wrought, partly in granite and partly in red freestone, and show a 2-inch chamfer. The bridge is 12 feet 7 inches wide and has a span of 10 feet 2 inches.

I have to thank Dr John Craig, F.S.A.Scot., and Miss Annie Craig for assistance in making the survey. With the exception of fig. 1, which is reproduced from a block kindly lent by *Aberdeen Newspapers Ltd.*, the photographs were taken by Dr Craig.

THE GOLDEN-TOOTHED SHEEP OF DUNNIDEER.

Note by Professor JAMES RITCHIE, M.A., D.Sc., F.S.A.Scot.

For centuries tradition has related that the hill of Dunnideer bore sheep with teeth of gold. The story, which has a scientific explanation, is well told in Bishop Leslie's *Historie of Scotland* (1578): ed. E. G. Cody (Scot. Text Soc.), vol. i, p. 48: -

“In the Gareoth [Garioch] is ane montane, quhilke goldne thay cal, the vulgar and commone stile of this montane is Dunedere, because it is said to abund in golde. This thay collecte of the scheip, quhilkes ar fed in this mountane, quhais teith and fleshe in lyke maner ar yallow, as with the cullour of golde thay had bene littid.”²

The fact underlying the tale is that the teeth of the sheep were covered with a yellow coating having a bright metallic sheen, and this the “vulgar and commone” of long ago understood to be gold, while sceptics of more recent years have suggested, with equal inaccuracy, that it might be a deposit of iron pyrites.

The truth is that the yellow metallic deposit is not confined to the sheep of Dunnideer, but has been found on the teeth of sheep elsewhere,

¹ Davidson, *op. cit.*, pp. 222-3.

² *I.e.* dyed, *cf.* “litster.”

as well as on those of many other mammals, including the ox, camel, tapir, eland, bison, hippopotamus, bear, and even man himself. Careful examination and analysis have shown that the incrustation is a deposit from the saliva, composed largely of lime, phosphoric oxide, and organic matter. The deposit is laid down upon the surfaces of the teeth in thin layers, and the deceitful metallic appearance is due to the refraction of light by the overlapping edges of the microscopic layers.

See Note by myself in *Scottish Naturalist*, 1921, p. 36.

V.

A FRAGMENT OF A THIRTEENTH-CENTURY CALENDAR FROM HOLYROOD ABBEY. EDITED BY FRANCIS WORMALD, M.A., F.S.A.

Remains of mediæval Scottish liturgical books are notorious rarities. The appearance, therefore, of a new thirteenth-century MS., although a mere fragment, is of great interest to the liturgist. Two conjoint and consecutive leaves, the second damaged at the top, from a calendar, and containing the months of July to October, will form the subject of this communication. The publication of this interesting document has been made possible by the kindness of Mrs Morris of Aqualate Hall, Newport, Shropshire, its present owner.

The leaves, which measure $13\frac{1}{4}$ inches by $9\frac{3}{4}$ inches, must once have formed part of a sumptuous book, possibly a Psalter or a Missal. The large KL monogram at the head of each month is decorated in gold and colours, while certain entries are written in red, green, or blue. In general appearance the workmanship of the KL is rather coarse, and the same may be said of the script. Both appear to belong to the latter part of the thirteenth century. Individual entries seem to look rather earlier than this, but this tendency is nearly always found in Scottish books, where some sort of time lag must be allowed for. It seems better, therefore, to give the hand a rather later date than at first appears necessary.

From an examination of the contents of the calendar there can be very little doubt that the use represented is that of Holyrood Abbey. In the first place Augustinian influences are strongly marked. This is shown by the presence of an octave for the feast of the deposition of St Augustine of Hippo (4 Sept.), and by the wording "*Translatio sancti patris nostri augustini*" (11 Oct.). Moreover, the gradings of the feasts

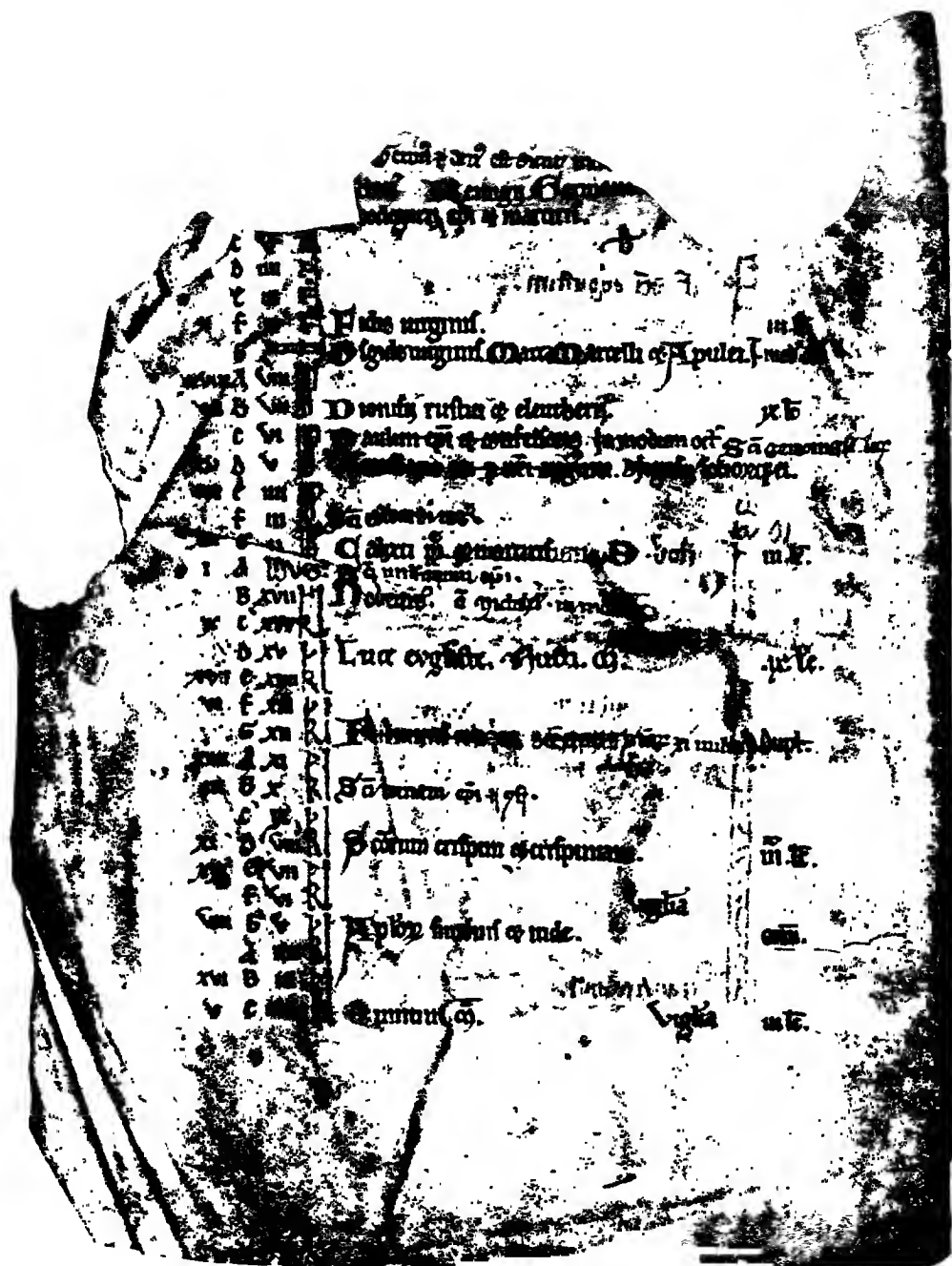


Fig. 2. Holyrood Calendar (October).

(these survive only in October) also conforms to Augustinian practices. They are as follows: Duplex, *i.e.* Duplex festum;¹ commune festum;² ix lc. *i.e.* festum novem lectionum;³ in modum octavarum, *i.e.* festum trium lectionum quæ more octavarum agantur;⁴ iii. lc. *i.e.* festum trium lectionum;⁵ and co. *i.e.* commemoratio.

Evidence for a Scottish origin is supplied by the presence of St Servanus or Serf (1 July),⁶ and St Ninian (16 Sept.).⁷ Both of these are, however, of general observation in Scotland, and are, therefore, of no use for purposes of closer localisation. It is otherwise with the entry on 21st October "Festiuitas reliquiarum sancte crucis." This is unquestionably the feast of the Holyrood relics, and is found in the calendar of the Holyrood Ordinal as "Festum reliquiarum." It seems clear, therefore, that these leaves once formed part of a liturgical book from the venerable Abbey of Holyrood.

Apart from the above-mentioned entries the character of the calendar is ordinary enough. It was almost certainly based upon an English original, possibly having some northern connection, since St Paulinus of York (10 Oct.) is found. With the exception of St Osyth of Chich (7 Oct.) the remaining English saints are all too common to be of any significance. The presence of the former may have been inspired by the influence of the great Augustinian house which bore her name in Essex.

A comparison between the fragment and the later calendar in the ordinal⁸ shows very close agreement between the two texts. An interesting example of this may be found in the fact that in both texts the feast or the dedication (13 Oct.) is omitted by the original hand. It is added, however, in the calendar of the ordinal. A number of the entries are written in colour. Those used are blue, red, and green. It seems impossible to decide whether each colour indicates a different liturgical

¹ Besides "duplex festum" we know from the Holyrood Ordinal of about 1450, *see* F. C. Eeles, *The Holyrood Ordinal*, 1916, pp. 6-17, that the higher feasts at Holyrood were also graded "primæ" and "secundæ dignitatis." Unfortunately, the gradings are lacking in this fragment for all months save October. There is, therefore, no means of telling whether the same practices were current in the thirteenth century.

² For the celebration of the commune festum at Holyrood, *see* F. C. Eeles, *op. cit.*, pp. 167, 168. This grading is also found in the calendars of Guisborough Priory, British Museum, Add. MS. 35285, ff. 168-173 b. and Oxford Bodleian MS., Laud Lat. 5; Launceston Priory, Cornwall, a MS. now in the possession of W. Berington, Esq., of Little Malvern Court, Worcester; Kirkham Priory, Yorkshire; Cambridge, Sidney Sussex College MS. 62. This will be sufficient to show that this grading is pretty general throughout Augustinian calendars.

³ *See* F. C. Eeles, *op. cit.*, pp. 169, 170.

⁴ For rules relating to this grading *see* Eeles, *op. cit.*, pp. 171, 172. The Launceston calendar has a grading "mor' oct." *i.e.* more octavarum.

⁵ *See* Eeles, *op. cit.*, p. 172.

⁷ *B.H.L.*, Nos. 6240, 6241.

⁶ *Bibliotheca Hagiographica Latina*, Nos. 7609, 7610.

⁸ F. C. Eeles, *op. cit.*, pp. 6-17.

value, as is the case with some calendars, or whether they are purely decorative. The latter is the more probable.

In later times the calendar has been altered. This has been done in two ways: first by the addition of new feasts, secondly by the deletion of certain entries in the original hand. Let us examine the latter first. They are a somewhat significant collection. The method of deletion used is a horizontal stroke through the entry. This has been done seven times. The feasts thus removed being as follows: Pantaleon (28 July), Felix and Adauctus (30 Aug.), Octave of St Augustine (4 Sept.), Ninian (16 Sept.), Paulinus (10 Oct.), Translation of St Augustine (11 Oct.), Feast of the Holyrood relics (21 Oct.). The most striking result of these deletions is the fact that thereby all the significant Augustinian feasts are removed, as well as SS Ninian and Paulinus, but, above all, the feast of the relics. What this indicates is that the calendar passed away from Holyrood and Augustinian hands. The other saints thus removed are too common to allow any speculation as to the reason for their deletion.

Additions are fairly numerous. They are written by various hands and none are earlier than the fifteenth century.

A large group, including the verses on the Egyptian days added at the top of each month,¹ consists of the following feasts: Translation of St Thomas of Canterbury (7 July), Kenelm, king and martyr (17 July), Arnulph (18 July), Christina (24 July), Seven Sleepers (27 July), Sampson (28 July), Stephen, pope and martyr (2 Aug.), Bertin (5 Sept.), Lambert (17 Sept.), Tecla (23 Sept.), Firmin (24 Sept.), Ciprian (26 Sept.), Translation of St Edward the Confessor (13 Oct.), Wulfrann (15 Oct.), Eleven Thousand Virgins (21 Oct.), Romanus (23 Oct.).

The remainder of the additions fall into much smaller groups of one or two, viz.:—Romanus (9 Aug.) and Antoninus (2 Sept.),² Felix and Adauctus (30 Aug.) with Tecla (23 Sept.), Gereon (10 Oct.), Michael in Monte Tumba (16 Oct.). All these additions are found in calendars of Sarum use as well as the grading "cum nocturno" on 9 Aug. and 23 Sept.³

They are, on the whole, rather a dull lot, but they tend to support the contention that the MS. left Scotland and Augustinian hands and was adapted to a more southern use, most probably that of Salisbury.

Another addition is found on 25 Sept., where the obit of one Thomas Neel chaplain to Lady Matilda Rows is recorded. It is dated 1506.

In printing the text the following rules have been used. Heavy

¹ These are the normal set found in calendars of this period, see R. Steele, *Dies Aegyptiaci*, 1919, pp. 9-10.

² MS. reads "Antonin."

³ This grading is found also in the Aberdeen Breviary, ed. Bannatyne Club, 1854.

type = entries in colours: (b.) = blue; (r.) = red; (gr.) = green; *Italics* = additions. Contractions have been extended according to normal practices.

- KL** ¹ *Tredessimus mactat Iulij denus labefactat.*¹
Iulij Octaue Sancti iohannis. et sancti seruani episcopi.
 2. **vi N.** Processi et martiniani et sancti swithuni.
 3. **v N.**
 4. **iiii N.** Translatio sancti martini.
 5. **iii N.**
 6. **ii N.** ² Translatio apostolum.²
 7. **Non.** ¹ *Sancti thome translacio archiepiscopi Cantuariensis.*¹
 8. **viii ld.**
 9. **vii ld.**
 10. **vi ld.** Septem fratrum.
 11. **v ld.** **Translatio sancti benedicti.** (r.).
 12. **iv ld.**
 13. **iii ld.**
 14. **ii ld.** **Dies.**
 15. **Idus.** Translatio sancti swithuni. **Dies caniculares.**
 16. **xvii Kl.** **Augusti.**
 17. **xvi Kl.** ¹ *Sancti kenelmi regis et.*¹
 18. **xv Kl.** ¹ *Sancti arnulphi episcopi.*¹
 19. **xiv Kl.**
 20. **xiii Kl.** **Margarete uirginis.** (b.).
 21. **xii Kl.** Praxedis uirginis.
 22. **xi Kl.** **Sancte marie magdalene.** (r.). Wandregisili abbatis.
 23. **x Kl.** ² Ippollinaris martiris.²
 24. **ix Kl.** *Sancte cristine uirginis.* **Vigilia.**
 25. **viii Kl.** **Iacobi apostoli.** (b.). Christofori et cucufati.
 26. **vii Kl.**
 27. **vi Kl.** *Sanctorum vii^{tem}. dormiencium martirum.*
 28. **v Kl.** ³ Pantaleonis martiris.³ *Sancti Sampsonis episcopi.*
 29. **iv Kl.** Felicis. Simplicij. Faustini. et Beatrix.
 30. **iii Kl.** Abdon et sennen.
 31. **ii Kl.** Germani episcopi.

¹———¹ Added in a later hand.

²———² *Sic.*

³———³ Lined through.

- KL** ¹ *Prima necat fortem perditque secunda cohortem.*¹
Augusti. **Ad uincula sancti petri.** (b.). Sanctorum machabeorum.
 2. **iv N.** ¹ *Sancti stephani martiris.*¹
 3. **iii N.** **Inuentio sancti stephani.** (r.).
 4. **ii N.**

¹———¹ Added in a later hand.

5. Non. **Oswaldi regis et martiris.** (gr.).
 6. viii ld. **Sixti felicissimi et agapiti martirum.**
 7. vii ld. **Donati episcopi et martiris.**
 8. vi ld. **Ciriaci sociorumque eius.**
 9. v ld. ¹ *Romani martiris cum nocturno.*¹ **Vigilia.**
 10. iv ld. **Sancti earencii martiris.** (r.).
 11. iii ld. **Týbureij martiris.**
 12. ii ld.
 13. Idus. **Ipoliti martiris.** (gr.).
 14. xix Kl. **Septembris.** Eusebij confessoris. **Vigilia.**
 15. xviii Kl. **Assumptio sancte marie.** (b.).
 16. xvii ld.
 17. xvi Kl. **Oct. sancti laurencij martiris.** (r.).
 18. xv Kl. **Agapiti martiris.**
 19. xiv Kl. **Magni martiris.**
 20. xiii Kl.
 21. xii Kl.
 22. xi ld. **Oct. sancte marie.** (gr.). Timothei et simphoriani.
 23. x ld. **Vigilia.**
 24. ix Kl. **Bartholomei apostoli.** (r.). Avdoeni episcopi et confessoris.
 25. viii Kl.
 26. vii Kl.
 27. vi Kl. **Rufi martiris.**
 28. v Kl. **Augustini episcopi.** (b.). Heremetis martiris.
 29. iv Kl. **Decollatio sancti iohannis.** (r.). Sabine martiris.
 30. iii Kl. ¹ *felicis et adaucti martirum.*¹
 31. ii Kl. ² *Felicis et adaucti martirum.*²

¹——¹ Added by a later hand.

²——² Lined through.

Kl ¹ [*Tertia*] *Septembris et denus fert mal [a membris].*¹

1. **Septembris.** **Egidij abbatis.** (r.).
 2. iv N. ¹ *Sancti antoni martiris.*¹
 3. iii N. **Dies.**
 4. ii N. ² **Oct. sancti augustini.** (b.).² **Translatio sancti cuthberti.** (r.).
 5. Non. ¹ [*S*] *sancti bertini abbatis.*¹ **Dies caniculares finiuntur.**
 6. viii ld.
 7. vii ld.
 8. vi ld. **Natiuitas sancte marie.** (r.).
 9. v ld. **Gorgonij martiris.**
 10. iv ld.
 11. iii ld. **Proti et iacineti. martirum.**
 12. ii ld.
 13. Idus.
 14. xviii Kl. **Octobris.** **Exaltacio sancte crucis.** (b.).
 15. xvii Kl. **Oct. sancte marie.**

¹——¹ Added in a later hand.

²——² Lined through in red.

16. xvi Kl. ¹ *Sancte Edithe virginis.* ix lc.
Eufemie uirginis ² **Beati niniani confessoris et episcopi.**² (gr.).
memoria de martiribus . . . *sociorumque eius.*¹
17. xv Kl. *Sancti lamberti episcopi martiris.*
18. xiv Kl. *Sancte* [erasure]. *cum nocturno.*
19. xiii Kl.
20. xii Kl. **Vigilia.**
21. xi Kl. **Mathei apostoli.** (b.). **Dies.**
22. x Kl. *Mauricii et sociorum eius.*
23. ix Kl. *Sancte tecla virginis cum nocturno.*
24. viii Kl. *Sancti firmini episcopi et martiris.*
25. vii Kl. *+ Dominus Thomas Neell erat capellanus domine.*
26. vi Kl. *Sancti cipriani episcopi et martiris. Matilde Rows. A^o dñi*
M^occcc^o sexto.
27. v Kl. *Cosme et damiani.*
28. iv Kl.
29. iii Kl. **Sancti michælis archangeli.** (r.).
30. ii Kl. *Ieronimi presbiteri.*

¹———¹ Added in a later hand.²———² Lined through in red.

1. **Kl** ¹ *Tercius et denus est Sicut mors [alienus].*¹
2. vi N. **Octobris.** *Remigij. Germani.*
3. v N. *Leodegarij episcopi et martiris.* **Dies.**
4. iv N.
5. iii N.
6. ii N. *Fidis uirginis.* iii lc.
7. Non. *Osgide uirginis. Marci Marcelli et Apulei. In modum octavarum.*
8. viii ld.
9. vii ld. *Dionisij rustici et eleutherij.* lx lc.
10. vi ld. ³ *Paulini episcopi et confessoris.*³ ³ **In modum octavarum.**³
Sancti gereonis sociorum.
11. v ld. ² **Translatio sancti patris nostri augustini.**² (r.). *Nigasij sociorumque eius.* (gr.).
12. iv ld.
13. iii ld.
14. ii ld. ¹ *Sancti edwardi regis.*¹
15. Idus. *Calixti papæ et martiris.* iii lc.
16. xvii Kl. ¹ *Sancti uulframmi episcopi.*¹
17. xvi Kl. **Nouembris.** [S]ancti *Michahelis in monte.*
18. xv Kl. [erasure]. co.
19. xiv Kl. **Luce evangelistæ. et Iusti. martiris.** ix. lc.
20. xiii Kl.

¹———¹ Added in a later hand.²———² Lined through.³———³ Lined through in red.

A FRAGMENT OF A THIRTEENTH-CENTURY CALENDAR. 479

21. XII Kl.	³ Festiuitas reliquiarum Sancte crucis. ³ (gr.). ¹ <i>Sanctarum xi milia virginum.</i> ¹ Duplex.	
22. XI Kl.		Dies.
23. X Kl.	<i>Sancti romani episcopi et confessoris.</i>	
24. IX Kl.		
25. VIII Kl.	Sanctorum crispini et crispiniani.	iii ^a lc.
26. VII Kl.		
27. VI Kl.		Vigilia.
28. V Kl.	Apostolorum simonis et iude.	commune.
29. IV Kl.		
30. III Kl.		
31. II Kl.	Quintini martiris.	Vigilia. iii lc.

¹———¹ Added in a later hand.

²———² Lined through.

³———³ Lined through in red.

THE CHAMBERED CAIRN OF CLETTRAVAL, NORTH
UIST. BY W. LINDSAY SCOTT, F.S.A.Scot., F.S.A.

(Read 11th February 1935.)

•
LOCATION.

The chamber tomb, which is the subject of this paper, lies in lat. $57^{\circ} 36' 51''$ N., long. $7^{\circ} 26' 39''$ W., at a height of about 350 feet above the sea and some 80 feet below the southern summit of the ridge of Clettaval, from which I have proposed to name it.¹ Lower down the slope is a standing stone, and lower down still the chamber tomb known as Tigh Cloiche, both being marked upon the Ordnance Survey. There is no reason to associate the two tombs, which are of different types, or to associate either with the standing stone.

The southern slope on which the tomb stands is the termination of a low range of hills running parallel and near to the western coast of North Uist. This island of the Outer Hebrides tilts generally westward from its high eastern edge through a middle region of lochs and peat bogs to a level and sandy area facing the Atlantic, and the great bulk of the modern population is confined to the last area. Judging by the distribution of chamber tombs the neolithic population of the island extended in addition over the central area, which was then largely free of peat. Although the Clettaval tomb now stands in a peat bog no peat was found underneath it.² Birch charcoal was found in the chamber, whereas the island is now virtually treeless.

The tomb is set east and west on a narrow and gently shelving terrace on the southern slope of the hill: the site has not been levelled and the façade, running north and south, follows the natural slope. The terrace has operated to collect water, and a considerable growth of peat now overlies the original soil: modern peat cuttings immediately

¹ The tomb is not marked on the Ordnance Survey, and the position given above is calculated trigonometrically from the following data and must be taken to be approximate. A line joining Monach Lighthouse and North Uist Church cuts the Garry Tighary peat road, which here runs east and west, at a point from which the centre of the cairn bears 115° , distant approx. 200 yards. The latitude and longitude of the lighthouse are stated on Admiralty Chart No. 2805; the latitude and longitude of the church, and the latitude of the road, are measured from the 6-inch Ordnance Survey, Hebrides, North Uist, Inverness-shire, Sheets Nos. XXXIII and XXXIV, respectively.

² A layer of peat 6 inches thick was found under the chamber tomb of Rudh' an Duin, Skye (*Proc. Soc. Ant. Scot.*, vol. lxvi, pp. 183 ff.; and vol. lxviii, pp. 194 ff.).

north of the tomb are filled with water even in dry seasons. The underlying rock is gneiss, which, on the steeper slopes, outcrops freely.

HISTORY OF THE SITE.

The history of the site subsequent to the period of use of the tomb has been unfortunate. At a period defined by an Iron Age A culture a circular stone fort some 26 feet in internal diameter, and with walls about 7 feet thick, was built over the western end of the cairn. A sketch plan of this fort is on Pl. I. The material of which it was built was obtained partly from cairn stones on its site, partly from stones from the eastern part of the cairn, and partly from slabs forming the actual structure of the tomb. By this means the cairn has been almost wholly removed: the degree of denudation can be seen from the sections in Pl. II. Two wall slabs and the northern half of the forecourt façade were taken away. The great slabs of the southern half of the façade appear to have proved not to be worth the effort of removing, for, while they had been dug out to their bases and thus allowed to collapse, they remain near their original positions. One had, however, been split laterally near its foot, and its upper part had been removed.

As a result of this activity the site was rendered a roughly level platform with a fairly steep scarp on its southern edge, created partly by the remains of the cairn and partly by the slope of the hillside. Across the south-eastern corner, overlying the southern part of the forecourt, a bank was built by occupants of the fort, and in the hollow thus formed peat had grown and stood to a depth of two feet over the centre of the forecourt (see Pl. II.).

When the fort in its turn had fallen into decay some secondary occupation of the broch period had taken place among its ruins. Two tangles of stones to the south of the fort represent use of its material to build huts or shelters, possibly in modern times, though it may be that excavation would show these to be hut circles of an earlier period. Finally, in modern times, peat digging had taken place up to the fallen wall of the fort and within what had once been the northern margin of the cairn.

With the consent of Mr Hector Mackenzie, a member of our Council, on behalf of the trustees of the late Sir Arthur Campbell Orde, Bart., the area indicated in Pl. I. has now been excavated. When the work began the site bore no more than the uninformative features shown in the excellent photograph published by the late Dr Erskine Beveridge in his valuable work on North Uist.¹ Considering the desperately

¹ Erskine Beveridge, *North Uist*, p. 254 (c).

wrecked and denuded appearance of the tomb the results have been in excess of all legitimate expectation.

THE FORT.

It will be convenient first to give the evidence obtained in the course of the excavation of the tomb regarding the Iron Age occupation of the site. Iron Age pottery was scattered thinly over the surface left when



Fig. 1. Entrance Passage of Fort looking inwards, showing slab-covering of the Drain which ran through it.

the cairn was denuded to build the fort, and in quantity in and under the bank which lay across the southern half of the forecourt. It was thought desirable to seek more precise evidence for the dating of the occupation of the fort by excavating a small area of it and, as shown in Pl. I., an area including the entrance was cleared.

The fort wall was found to be built upon an irregular foundation of boulders. The wall, to judge from its structure immediately to the west of the entrance, was composed of facings of stones, reasonably well chosen but not large, with a core of earth and rough blocks. Its thickness at the entrance was 7 feet. The fort, therefore, was of no great defensive strength, and differed wholly in its building from the massive and solid structure of the *brochs*.

Through the wall an entrance passage 2 feet 6 inches wide ran in an east-north-easterly direction (fig. 1). Its northern outer jamb was a small pillar, 2 feet 9 inches high, now fallen; its southern outer jamb was built of coursed masonry, now somewhat slipped. Through the entrance ran an unpaved drain formed of blocks laid on edge and covered with fairly large slabs. At the inner end of the passage was a threshold composed of two long blocks, raising the level 6 inches above the covering slabs of the drain, and rebates to hold a door. Within the fort, in the very small area examined, the floor rose 9 inches further to clear a boss

of solid rock, the natural level of the ground rising to the northward. The maximum height to which the wall of the passage now stands above the slab flooring of the drain is 3 feet; there are no remains of roofing. Inside the fort, and to the north of the entrance outside, the wall stands to 4 feet above its foundations.

Above the slab-covering of the drain was a second floor about one foot higher composed of slabs laid upon blocks set on edge on the lower floor. This, no doubt, belongs to the period of occupation of the fort.



Fig. 2. Secondary Hut abutting on Wall of Fort east of Entrance.

and may be the outcome of a tendency of the drain to flood in heavy rains. At a still later stage, when the fort was disused, a third floor has been roughly laid down at a height of 2 feet 3 inches above the covering of the drain. The northern side of the entrance passage wall was then reduced to this height and a small cell, as shown in Pl. I., had been constructed over the filled-up passage and in the thickness of the wall to the north of it. The south wall of this cell is provided by the upper courses of the original south wall of the passage; the north wall is formed by a revetting, by stones laid horizontally and on edge, of the internal material of the fort wall. At its eastern end, over the passage, the cell is completed by rough walling. The maximum height of this cell above its floor is now about 2 feet.

Outside the fort, to the south of the entrance, is a hut of some size built against the fort wall but not bonded into it (Pl. I. and fig. 2). The outer part of this is now reduced to a single course, but its inner wall,

which abuts on the fort wall and is tolerably well built, stands to 2 feet above the floor. This is of compacted earth except for a roughly paved area near the door. This hut must have been constructed at a date when the fort wall was to some degree masked by fallen debris.

Underlying the floor of this cell, and extending to the area outside the fort entrance, is a burnt floor composed of layers of red and yellow peat ash. Peats giving both red and yellow ash are found in the island. No hearth was discovered, and the presence in the floor of a few pottery fragments and two pieces of pumice is insufficient evidence of the use to which this area was put. Bones are so ill-preserved in the peat that their absence is inconclusive, and it is not impossible that the floor may have been used for cooking purposes. The presence of successive layers of peat ash of different colours makes it unlikely that their cause was an attack on the fort entrance with the aid of fire.

THE STRUCTURE OF THE TOMB.

Internal Structure.—Internally the tomb is divided by septal slabs into five sections (numbered I. to V. in Pls. I. and II.) and a portal section



Fig. 3. Section I. of Chamber looking south. An abutment of the missing north Wall P. 5, is seen in the middle foreground. The base of the displaced Pillar is on the left in Section II. To the right of it, resting upright against the end of P. 8, is the small slab which formed the east end of the Cist.

(numbered VI.) which lies to the east of the outermost septal slab, but within the wall orthostats P. 1 and P. 11. The term "section" is here

used as an impartial one involving no theory as to the purpose of the several parts. Section I. (figs. 3 and 4) is 7 feet in mean width: the north wall has been stolen, but its position was defined by the large block shown in Pl. I., which formed an external abutment and was itself packed to the north and west with smaller blocks, and by a sharp change in the colour of the soil. Section II. (fig. 4) is trapezoid, narrowing from



Fig. 4. Sections I. and II. of Chamber looking west from Section III. S. 2 in foreground. S. 1 collapsed and removed. Pillar displaced and lying on left in Section II. Solid rock-shelf on right in Section I. on which the missing north Wall. P. 5, stood.



Fig. 5. Section III. of Chamber looking east from Section II. S. 2 in foreground. S. 3 behind. The displaced Pillar lies on the right in Section II.

the width of the first to that of the remaining sections (figs. 5 and 6), of which the mean width varies from 4 feet to 3 feet 6 inches at floor-level. The portal area, section VI., is slightly over 3 feet wide and 1 foot 6 inches long. The heights of the sections, as measured from the rock-floor to the top of the wall orthostats, diminish from 7 feet in section I. to 5 feet in section II. to 4 feet 6 inches in section V. As measured from the original floor, the heights diminish from 6 feet 3 inches in section I. to 4 feet 9 inches in section II. to 4 feet 3 inches in section V.

The walls of each section are composed of single orthostats of gneiss supported either directly on the solid gneiss floor or on blocks or slabs laid upon that floor. While the walls of section I. slope slightly outwards, the walls of the other sections slope inwards, being supported at one end of the section by overlapping the walls of the next section and at



Fig. 6. Sections I., II., and III. of Chamber looking west from Section IV. S. 3 in foreground. The south Wall of Section IV., P. 10, is missing; the north Wall P. 2, is heavily tilted and supported on the dry masonry inserted by the excavators and seen at bottom right.

the other by a septal slab. These septa are formed by slabs of gneiss, in most cases irregularly shaped, and completed or supported at one end by blocks set upon the floor. S. 3 was doubled; a large slab stood vertical upon the floor and in contact with the true septum which took the pressure of the wall orthostats (fig. 6).¹ The height of the septa above the floor varied from 2 feet 6 inches to 1 foot 6 inches. The south wall of section IV. (P. 10) and the corresponding septum (S. 4) were missing; owing to the rise of the rock-floor the former had been a relatively small orthostat within the capacity of the fort builders to remove, while the latter had disintegrated into fragments and piles of grit. The septum S. 1 was only slightly less rotten, and disintegrated into fragments shortly after the filling was removed and before a photograph was taken.

The natural rock-floor of gneiss is very irregular in level. Its hollows are filled with a fine, greenish clay, which, except where it was necessary to provide a foundation for an orthostat, the builders of the tomb had not disturbed. The chamber floor was the solid rock in the north parts of sections I. and II. and over the whole of section IV. The remaining parts of sections I. and II. were roughly paved with slabs lying on the clay. In section III. small slabs had been laid on the clay

¹ This second slab, if not an original and intentional feature, probably reached its present position early in the use of the tomb; I found no explanation of its purpose in which I feel any confidence.

at the western end and a few at the eastern end: supported on these two groups of slabs was a long, thin slab, running nearly the whole length of the section and leaving a cavity beneath it. As large parts of vessels were found beneath this it is possible that it was laid down after the original construction of the tomb. Similarly in section V, a large thin slab bridged a hollow filled with sludge and water, and below its level pottery was found. In section VI., the portal, a solid rectangular slab had been provided as a doorstep.

As will be seen from Pl. I. the axis of the chamber is not straight, but follows an ogee curve. The solid rock rises to the north of section I, and to the south of section V., and it might be argued that the axis makes a double curve merely to avoid these difficulties. It could, however, have been kept straight by orienting it slightly more to the north of east, which, so far as appears from the varying orientation of chamber tombs, was open to no religious objection. It seems reasonable to suppose, therefore, that the double curve in the axis was a foreseen and intentional feature.¹

No roofing remains. A considerable number of slabs between 2 inches and 4 inches thick were found in the upper part of the filling, and these might represent remains either of barrel vaulting material or of dry walling used to level the tops of the orthostatic walls. No slabs long enough to bridge section I. were found in the debris of the fort, but this negative evidence is not entirely conclusive as it can be shown from the forecourt that the fort builders broke up large slabs. Whether the original roof was a flat one, or a false barrel vault, must therefore remain in doubt: as regards section I. at any rate the latter supposition is on the whole the more likely one. Whichever type of roof it was the fort builders had very effectually removed it.

In the south-east corner of section I. was an arrangement of vertical slabs which suggested the walling off of that corner.² A thin rectangular slab stood at right angles to P. 7 and resting against the end of P. 8; though not fixed its position was probably original (fig. 3). Parallel to P. 7, and 1 foot 9 inches from it, a slab stood vertically to a height of 1 foot above the slab flooring and fixed in it. A third slab, not fixed in the slab flooring, stood resting against and in line with the last, and approximately filled the gap between it and the slab which rested against P. 8.

¹ This is confirmed by a similar twisted passage in the chamber tomb of Unival, four miles to the south-east of Clettraval, which is now in course of excavation. This tomb shows marked similarities to, and no less marked differences from, Clettraval.

² This feature is confirmed by the existence of an elaborately made cist of slabs in the corresponding position in the chamber of the Unival tomb referred to in the preceding note.

In section II. a pillar, 4 feet 6 inches long and approximately 1 foot square in section, was found lying diagonally with its base on the rock-floor on the north side of the section and its head on the septum S. 2 (Pl. I. and fig. 5). Examination of its position showed that it could not have fallen from above, and I am satisfied that it originally stood upright in the north-west part of the section where its base was found. No wedging blocks were at its foot, but these would not be required to maintain it upright as its base was flat and at right angles to its axis.



Fig. 7. The south Façade looking south. The entrance to the Chamber, orthostats P. 1 and P. 11, is seen on the right. Q. 1 is in the centre, and behind it are seen the remains of Q. 2 lying horizontal, Q. 3, Q. 4, and Q. 6. The partially excavated path up to the Portal is seen in the foreground.

Its height was 3 inches less than that of the level top of the south wall, P. 8.

The Forecourt Façade.—Of the façade to the forecourt only the southern half now remains. This is a wall of great orthostats declining in height from north to south, the most northerly being 9 feet high (fig. 7). With the exception of the southernmost, which was set very slightly forward, these orthostats had stood accurately in a line set at an angle slightly greater than a right-angle with the line of the axis of section V. of the chamber. Save for a fragment of dry walling filling in a narrow gap between Q. 2 and Q. 3 the façade remaining was wholly orthostatic. It is natural to suppose that the interval of 3 feet 6 inches between Q. 1 and the portal slab P. 11 was once filled by a low orthostatic or dry stone wall, but no trace of this remained as the cairn had

here been denuded by the fort builders to the solid rock, 6 inches above which Iron Age pottery was found.

None of the façade orthostats were found in their original positions, which were determined by the excavation of their emplacements. They had been supported by propping them almost vertical against massive abutments at the back and securing their feet at the front by blocks set in earth. The line of abutments behind the façade was cleared except behind Q. 4, and was found to consist of a wall of heavy blocks set accurately in line (fig. 8). Behind this were the large boulders of the cairn, and resting against these and above the wall of blocks were slabs of considerable size designed to wedge out the orthostats into an approximately vertical position. The blocks securing the feet of the orthostats at the front were found in position only in the cases of Q. 2 and Q. 6, which had tipped forward over them. So much of the former as remained lay horizontal; the latter lay with its head tilted downwards. The feet of Q. 1, Q. 3, and Q. 4 had slipped forward with the removal of the upper part of the cairn behind them. The small orthostat Q. 5, which filled the interval between its larger neighbours Q. 4 and Q. 6, was tipped forward and lay horizontal.

The collapse of the southern half of the façade had been brought about by the fort builders, no doubt in search of stone. They had removed the bulk of the cairn material behind the façade and had cleared the forecourt as far south as Q. 5 substantially down to floor-level. The bank which they had built in a north-easterly direction across the forecourt from Q. 4 was subsequent, though possibly immediately subsequent, to this clearing; only a short length was removed in the present excavations owing to the labour involved, but Iron Age pottery was found at



Fig. 8. Pit in which Q. 2 stood with abutments on the left. The remains of Q. 2 lie horizontal on the right. Q. 1 is seen top right lying tilted backwards over its pit.

its base. Except for this bank the forecourt was not filled in again by the fort builders, and its filling consisted of the peat which had formed in the hollow created by the bank (*cf.* section CD. Pl. II.). The only part of the southern half of the façade which had been removed by the fort builders was the upper part of Q. 2, which had been split horizontally.

The collapse of the façade had largely destroyed the paving of the forecourt in front of it. This had probably been in the nature of a path along the façade. It was found under Q. 6 and partially under Q. 2, these two orthostats having tipped forward over it. When the feet of Q. 3 and Q. 4 slipped forwards they had carried the paving with them, and overlapping slabs were found displaced in front of them. In front of Q. 1 and east of the present position of Q. 2 only isolated paving slabs were found complete, but many were discovered reduced to a layer of coarse grit.



Fig. 9. The Path leading up to the Portal looking east from the Portal.

these accretions to such a degree that they could only be split apart with a pick. Specimens of this red matter were submitted to the late Dr H. H. Thomas, who recognised it as somewhat incoherent iron pan, a substance which forms in stagnant water, and the areas of red mud, specimens of which were examined in the laboratory of the British Museum, no doubt represented such stagnant pools. These conditions may have contributed to the disintegration of slabs composed of the more rotten elements of the gneiss into the layers of coarse grit already mentioned.

From the portal a solid path extended in the line of the axis of section V. of the chamber (fig. 9). This was composed of boulders set

in the clay overlying the solid rock surface, which, except for isolated bosses, sloped downwards to the east of the façade. Over these boulders was laid a rough layer of slabs, sometimes overlapping and up to 3 feet in length. The built path ceased 12 feet east of the doorstep, but a layer of slabs erratically laid on the earth continued 5 feet further.

The northern half of the façade was excavated for 15 feet north from the portal. Beyond that excavation offered no hope of results as the cairn had been wholly removed by the fort builders, and modern peat

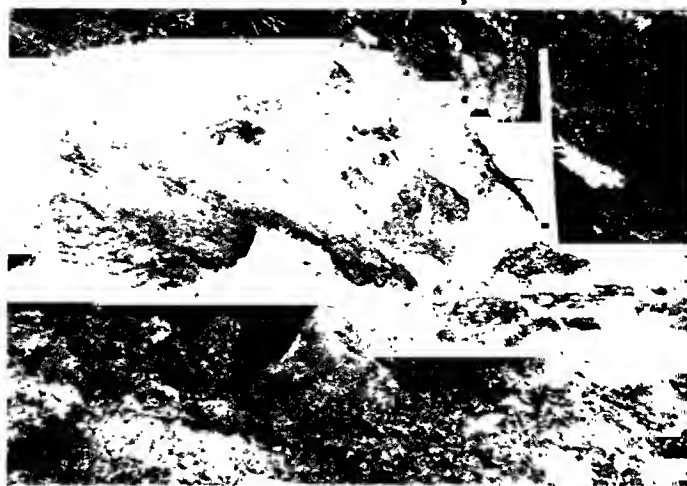


Fig. 10. Abutments of northern Façade. Section of dry walling in front of Pick.

cutting must have destroyed any traces of orthostat emplacements below floor-level (*cf.* Elevation of Façade, Pl. II.).

The first façade orthostat was discovered fallen backwards and reduced to fragments. The stone had been an exceedingly rotten one, composed in part of granite elements in the gneiss which, like many paving slabs in the forecourt, had disintegrated into piles of coarse grit. Shovel-fuls of pure granitic grit were removed from places where this rotten part of the orthostat had lain. The remainder, composed of harder elements in the gneiss, had been shattered into splinters large and small. A large block sunk in the natural clay had served as a support at the front of the foot of this orthostat: and 2 feet 6 inches to the west of this was the line of blocks forming the abutment at the back (fig. 10). Piled-up slabs to the east represented paving displaced by the foot of the orthostat as it capsized.

Beyond this orthostat lay a short length of dry walling standing to a height of three courses. The next succeeding orthostat had been

removed after having been apparently tipped forward on its face. The line of its abutments remained, less massive than those of the southern half of the façade, but undisturbed (fig. 10). The paving, which had been laid in front of this orthostat, was found substantially undisturbed and extending to an approximately uniform width of 4 feet. On the west edge of this, immediately to the north of the dry walling, was a thin slab set on edge which had supported the foot of the orthostat at the front.

The line of the west edge of the pavement, which roughly corresponds with the line of the abutments, gives an approximate indication of the angle of the north half of the façade to the axis of section V. of the chamber and of the path leading to the portal. This angle is 101° , comparing with an angle of 99° in the case of the south half of the façade. While, therefore, the first orthostats to the north and south of the portal were not set symmetrically—possibly because the boss of solid rock to the west of Q. 1 rendered a nearer approach to the portal there impracticable—we have some reason to think that the northern and southern halves of the façade were generally symmetrical, each being set back from the forecourt axis some 10° more than a right angle.

The Peristalith.—The peristalith was excavated for a distance of 30 feet west from its termination at the south end of the forecourt façade. It was found to be a tripartite structure (fig. 11). Its inner element was a wall of massive blocks set on end: these were of varying shape and size, the average height being about 2 feet 6 inches. Outside and below this—for the hill here fell away rapidly—was a low wall of slabs laid horizontally with a level upper surface. The slabs composing it were generally thin and of moderate size; one much thicker and larger than the others was 4 feet long, 1 foot 3 inches wide, and 1 foot thick. The third and outermost element was a ramp of relatively small slabs tilted upwards and inwards, immediately against the second element.

The line of this section of the peristalith was straight, making an angle of 10° with the forecourt axis. Its eastern end was definite, the inner element ending immediately behind the original position of Q. 6 and its middle and outer elements ending some 5 feet to the east of this. Short trenches immediately to the south and south-west of the fort did not disclose any peristalith, but in this area it would almost certainly have been removed by the fort builders. The position which it should have occupied on the north of the chamber was occupied by peat cuttings, and here also it might well have been removed with the cairn material in building the fort. The south-eastern section, no doubt,

owes its preservation to being distant from, and at a lower level than, the fort.

The positive evidence for the original plan of the peristalith was thus limited to a 30-foot length of the south side. If this is typical, and the structure was generally symmetrical, the whole must have been

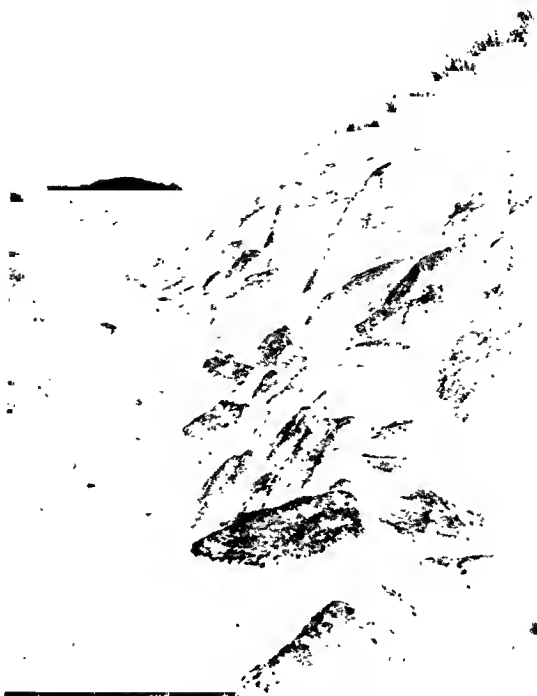


Fig. 11. Peristalith looking west from Q. 6. The inner wall of large blocks is on the right, the intermediate wall of flat slabs is to the left of this, and the outer ramp of tilted slabs is further to the left.

wedge-shaped in plan, tapering from its terminations at the ends of the forecourt façade towards the tail of the cairn.

The excavations already mentioned as having been commenced at the neighbouring chamber tomb of Unival suggest, however, that the assumption of symmetry may not be justified. Present indications are that the plan of the façade of that tomb will prove to be the same as that of Unival, and with the portal much to the right of the centre of the façade, while the peristalith will be found to follow a roughly circular plan. If that should be the case, it will be reasonable to infer that the façade of Cleittraval extended no further than the northern limit of the excavations and of the present cairn, and that the peristalith ran thence

in a westerly direction, curving round [under the eastern part of the fort.

The Cairn.—The material of the cairn where this remained was rounded boulders and irregular blocks and slabs of every size up to a hundredweight or more in weight. When excavated the interstices were entirely filled with earth, but this was probably due to denudation: the original shape may well have been steep-sided enough to prevent the accumulation of soil and the growth of vegetation.

The short trenches mentioned above as being cut immediately to the south and south-west of the fort disclosed Iron Age pottery and no indubitable cairn material, and boulders found underneath the wall of the fort may have been a foundation laid for that wall. The extent of the cairn to the east of the forecourt façade was not determined by excavation, and surface indications were wholly unreliable owing to the vicissitudes the site had undergone. The periphery was traced for short lengths at the west and east ends of the section of the peristalith excavated. At the west end it was 3 feet outside the outermost element of the peristalith: at the east end it was apparently beginning to curve round to the north.

The extremely limited evidence therefore points to a cairn originally wedge-shaped in plan with a straight or rounded eastern end overlying the forecourt.

DISTRIBUTION AND STRATIFICATION OF OBJECTS.

The objects found in the chamber were minute fragments of human and animal bones, sea-shells, an object of pumice, charcoal, and a remarkable wealth of pottery. Those found elsewhere were two granite objects, split pebbles of jasper possibly humanly struck, quartz pebbles, and considerable quantities of Iron Age pottery.

The Chamber.—The objects in the chamber were classified according to the section in which they were found and in three strata. The datum for recording stratification was the rock-shelf on the north side of section II, on which the pillar stood. Stratum A was from 2 feet above datum to the modern surface, the average level of which was 3 feet 6 inches; stratum B was from 1 foot to 2 feet above datum: stratum C was less than 1 foot above datum. Owing to the irregularities in the floor stratum C was in places more, and in other places less, than 1 foot thick.

The filling of the chamber below the turf consisted in stratum A of brown earth. From this there was a well-defined change in the upper part of stratum B to black material, which continued to the floor and

became generally more slimy as the floor was approached. Stratum C was generally free of fallen stones: stratum B contained a considerable number of slabs; in stratum A there were few slabs, but a number of rounded cairn stones.

With the exception of a single fragment on floor-level at the west end of section II, the bones were found in one small packet in stratum C in the middle of section I. What remained were minute fragments of calcined bones among white slime representing the last residuum of other bones. The complete or almost complete destruction of bone by the chemical action of the soil is a normal feature in Hebridean tombs.

Scores of winkle and limpet shells were found in stratum A in the middle of section II, in a single packet lying within a space not more than a foot in any direction. They are certainly not original deposits in the tomb, and in all probability represent a basketful of refuse thrown down by the inhabitants of the fort.

The pumice was in stratum C in the north-east corner of section I.

Charcoal was found throughout the black filling in strata B and C in all sections of the chamber except IV., but to a much greater degree in the lower stratum.

About forty pottery sherds were found in stratum A. With the exception of a very few, specified in the catalogue of pottery below (p. 500), which could be shown to belong to vessels represented by more numerous sherds in stratum B, this pottery was all assignable to the Iron Age. After the building of the fort the chamber must have appeared as a shallow trench a foot or more below the general level of the cairn surface, and it no doubt collected rubbish such as the shells referred to above.

Of the many hundreds of sherds found in strata B and C none need be, or indeed at all suggests being, of the Iron Age: all that are in any way determinate can be referred with fair certainty to the Neolithic and Beaker periods. The distribution of the vessels represented is shown in the table on p. 496.

It will be appreciated that the association of sherds together as belonging to the same vessel has been a matter of judgment, and can only be regarded as approximately accurate. In making the classification the number of cases of doubt was less than might have been expected, but a certain number of shad-off and minute fragments had to be disregarded. Equally it has been a matter of judgment whether vessels should be classified as Neolithic or Beaker, and, where the number or character of the sherds was insufficient for a reasonably confident decision, they have been shown as "indeterminate." The merits of the classification can be tested to some degree by reference to the catalogue

given below and fully by examination of the sherds themselves, which are numbered and deposited in the National Museum of Antiquities, Edinburgh.

VESSELS REPRESENTED IN STRATA B AND C.

		Sections of the Chamber.						All Sections.
		I.	II.	III.	IV.	V.	VI.	
Stratum B	Neolithic	5	...	1	1	...	...	7
	Beaker	4	1	...	1	...	...	6
	Indeterminate	11	6	1	...	...	...	18
	Total	20*	7	2	2	...	...	31*
Stratum C	Neolithic	3	2	3	...	2	1	11
	Beaker	...	...	...	...	...	...	...
	Indeterminate	1	...	2	...	...	...	3
	Total	4	2	5*	...	2	1	14*
Strata B and C.	Neolithic	8	2	4	1	2	1	18
	Beaker	4	1	...	1	...	...	6
	Indeterminate	12	6	3	...	...	...	21
	Total	24*	9	7*	2	2	1	45*

The numbers marked with an asterisk indicate that not less than that number of vessels was represented.

It will be seen from the table that the total number of vessels represented is not less than forty-five, and all these may be regarded as original funerary deposits. That all the vessels represented were originally deposited whole is not necessarily to be assumed. It will also be seen that more than half the vessels were in section I. of the chamber: of the balance, diminishing numbers were in sections II. and III., only two each in sections IV. and V., and only one in the portal, section VI. As recorded in detail in the catalogue below, two vessels (II.B. 1 and V.C. 2) produced fragments in two contiguous sections of the chamber, and one (I.B. 3) in sections I. and III.

In stratum B seven determinate vessels were Neolithic and six Beaker. In stratum C eleven vessels could be classified definitely as Neolithic

and none as Beaker, while three were indeterminate. Of these last, only one, represented by a single sherd (I.C. 4), was at all likely to be other than Neolithic. Study of the pottery itself, therefore, gives no reason to doubt that the stratification represents the order of deposition of the vessels in any one section of the chamber. Comparison of one section with another would not be legitimate, as it cannot be inferred that the rate of accumulation of the filling in different sections was the same.

Examination of the filling of the chamber gave reasons to expect disturbance of the stratification only in two places. The northern edge of section I. was evidently disturbed by the removal of the north wall orthostat, P. 5, the black filling being replaced by brown soil along the line where this orthostat had stood. This disturbance did not, however, affect stratum C, since P. 5 had stood on a shelf of solid rock more than a foot above the floor of the section. Few sherds were recovered from this northern edge, and all were small.

Worse disturbance had occurred in section IV. when its south-wall orthostat, P. 10, was removed. The rock-floor rose high in this section, so that stratum C was hardly represented, and the filling consisted of brown earth and in considerable part of fallen slabs and cairn stones. Only four sherds were found, all in stratum B, and in a position which must originally have been occupied by the stolen south wall: three of them belonged to a Neolithic- and one to a Beaker-type vessel.

Making due allowance for this evidence of disturbance, I think that considerable reliance can be placed on stratification in sections other than IV. Stratum C was protected from disturbance by the considerable number of fallen slabs in stratum B. The fort builders, no doubt, trampled the latter heavily enough, but the funerary deposits even in that stratum were already well covered and were in all probability crushed rather than disturbed. In stratum C, and also, in the south part of section I., in stratum B, large parts of vessels were found intact. This does not of course exclude the ordinary disturbance to which chamber tombs are subject by the interference of later burials with earlier ones, but, if this had been serious, the number of cases of vessels of which sherds were found in two strata would have been much greater than the instances which actually occurred and are recorded in the catalogue below.

In section I. the great bulk of the sherds, and all the vessels of which large parts were found intact, were in the south and east parts of the section. In section II. the two fairly complete pots in stratum C were found on the north side, immediately east of the base of the pillar. In

section III. the sherds of the two restorable pots were found in the north-east and south-east corners. In section V. the vessel V.C. 1 was found, broken but nearly complete and not scattered, standing on a slab under the north wall and at a lower level than the large paving slab which spanned the floor.

Other Parts of the Site.—The two granite objects in the shape of flattened or faceted balls were found in the pit in which Q. 2 had stood.

Water-worn white quartz pebbles were found in a number of positions. Two such, one being split, were found on the top of the north wall of section IV. of the chamber. A split pebble was in the pit in which Q. 2 had stood, and two, unbroken, to the east of Q. 2 on the forecourt floor. One pebble was on the floor to the east of Q. 4 and one in the cairn to the west of it. Two pebbles, one of them battered, were found on the original ground-level at the junction of the peristalith with the southern façade. Numerous blocks of white quartz other than water-worn pebbles were found in the cairn material, but as these occur naturally in the gneiss, their presence was probably due to natural causes.

Iron Age pottery was found in the area of the fort excavated, in and under the Iron Age bank across the forecourt, and scattered thinly over the whole surface left when the cairn was denuded to build the fort. As there was a secondary occupation of the fort at a period when the original structure had fallen into decay, it would be very desirable to distinguish stratigraphically between the pottery belonging to the two periods.

The small area of the fort excavated gave, unfortunately, no stratigraphical evidence of value. The secondary structure to the south of the entrance forbids any inference that pottery found outside the entrance belongs to the period of occupation of the fort; the secondary structure over the entrance equally forbids any inference as regards the pottery found in the entrance passage or immediately within the entrance. Comparison of the fragments found in the passage respectively above and below the floor, which was laid down a foot above the slab-covering of the drain, show no distinction of type, and indeed this floor could not be regarded as effectually sealing the deposits below it. The drain might be expected to be sealed when the fort had fallen into decay and the secondary structures were built, but only one of the few fragments from the drain showed any distinctive features.

The only pottery from other parts of the site which was effectually sealed was the large deposit under the bank across the forecourt. This

bank does not extend south-west beyond Q. 4 and it dies away, so far as surface indications go, to the north-east. Its intention can hardly have been defensive. If a conjecture may be hazarded its purpose was to do that which in fact it did do, namely, to dam up water and form a pond: even in the, probably wetter, conditions now subsisting there is no natural and substantial supply of water in the neighbourhood of the fort. However that may be, it probably belongs, with the pottery underneath it, to the period of the fort's use.

Of the sherds found elsewhere on the surface of the cairn, as denuded by the fort builders, all that can be said is that they are more likely to belong to the period of intensive occupation when the fort stood than to that of the secondary occupation when it had already partially collapsed.

DESCRIPTION OF BONE FRAGMENTS.

The fragments of bone found in stratum C in section I. of the chamber were examined by Dr J. Wilfrid Jackson, and those which he considered as probably human were further examined by Miss M. L. Tildesley. The animal bones, which were calcined, were reported by Dr Jackson to be consistent with a small sheep or goat. Regarding the human bones Miss Tildesley reports as follows:—

“Two fragments can be definitely identified as human—the shaft of a metacarpal, and part of the left inferior articular surface of a vertebra (? 7th cervical)—and with one exception the other small fragments are quite consistent with a human derivation, being fragments of ribs, of shafts of long bones, of the cancellous tissue in the extremities of long bones, etc. The evidence of burning is quite clear, two fragments being blackened, and many of the others showing the kind of splitting characteristic of cremated remains. It is asked whether the condition of the bones suggests mere scorching, perhaps from purificatory fires lit in the grave. Since these fragments are split as thoroughly and in the same way as the fragments of bone from cremated bodies, one infers that they were not merely scorched, and if the burning was the result of a purificatory fire, this must have been lit immediately above the body and have consumed the parts here represented as effectually as a cremation would have done. Also it can be asserted that these were not mere dry bones when subjected to fire.

“The texture of many of these fragments, unlike that of most cremated remains, is quite chalky. Presumably this change must be attributed to the chemical content of the soil in which they were preserved.”

DESCRIPTION OF NEOLITHIC AND BEAKER POTTERY FROM CHAMBER.

Section I.

Stratum B.

I.B. 1 (fig. 12).—Thirteen fragments, including two contiguous ones, of a vessel of a fairly fine paste, grey to buff in colour; thickness 5 mm.,

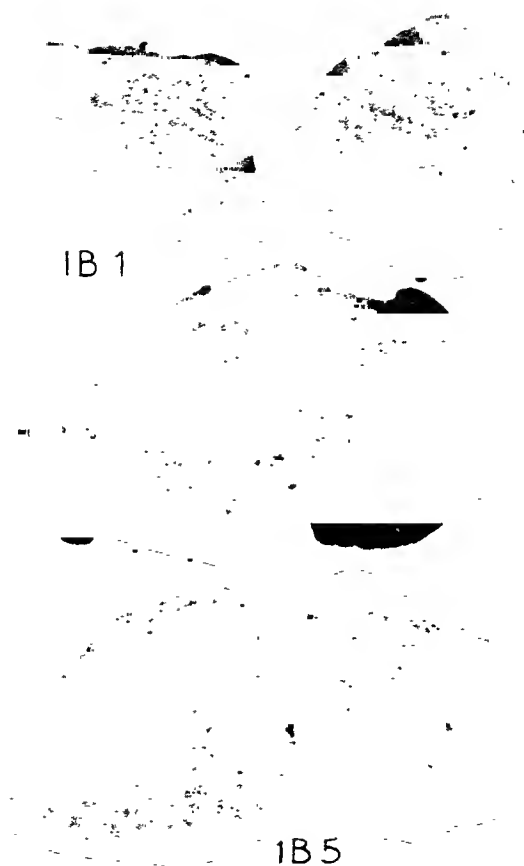


Fig. 12. Vessels *I.B. 1* and *I.B. 5*. (J.)

increasing to 9 mm. at the shoulder. The vessel had a thickened and slightly angular shoulder, at which the diameter is about 14 cm. It is decorated with at least two bands, one of which has its centre line on the line of the shoulder. Each consists of one row of fairly widely spaced horizontal chevrons between parallel lines. All the decoration is formed

by light impressions of a shell. Experiment shows that a small cardium shell can be used so as to give such impressions.

I.B. 2 (fig. 21).—Fragment of beaker of moderately fine grey paste having a dark grey burnished outer surface: thickness 6 mm. Decorated with two groups of horizontal lines deeply incised with a fine-pointed instrument, and between these a band of close diagonal lines impressed with a fine comb.

I.B. 3 (figs. 13 and 36).—Numerous fragments of a somewhat anomalous beaker of which the upper half has been restored and the profile conjecturally reconstructed. The paste is dark grey, fairly fine.



Fig. 13. Vessel I.B. 3. (1.)

with fine grit; the thickness is 7 mm. The decoration, starting from the base, consists of a band of seven horizontal grooves, a band of large chevrons formed of very shallow grooves, another band of horizontal grooves, two lines of dots at the greatest diameter of the vessel, another band of horizontal grooves, a narrower band of very shallowly grooved chevrons, seven horizontal grooves, and, on the lip, curving lines running upward impressed with a cardium shell. The top of the rim, which is flat, is decorated with close diagonal impressions of a similar shell. Other fragments of this vessel were found in stratum A in section I., and in stratum B in section III.

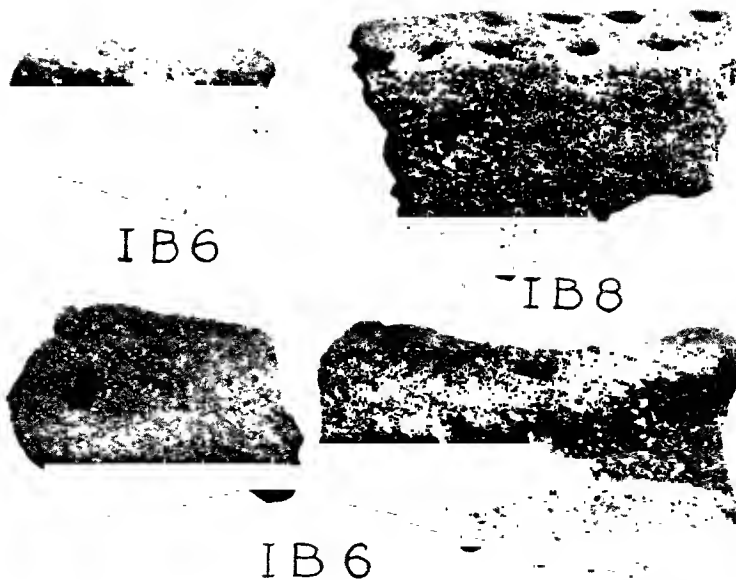
I.B. 4 (figs. 14 and 36).—Three rim and two other fragments of dark grey paste, moderately coarse: thickness 12 mm. The rim is flat: below it there are three parallel incised lines. Lower on the vessel is a band of horizontal lines, deeply incised with a square-pointed instrument, joined by diagonal lines or chevrons.

I.B. 5 (figs. 12 and 36).—Eight fragments of fairly fine paste, grey to buff in colour, 9 mm. thick. Decorated with parallel lines irregularly



IB 4

Fig. 14. Vessel I.B. 4. (1.)



IB 6

IB 8

IB 6

Fig. 15. Vessels I.B. 6 and I.B. 8 (interior). (1.)

incised with a fine instrument. A fragment of flat base probably belonging to this vessel shows a group of vertical chevrons above the distinct foot, from which the wall of the vessel spreads out widely. Four of the fragments were found in stratum A.

I.B. 6 (figs. 15 and 37).—Rim, shoulder, and other fragments of fairly fine grey to drab paste mixed with a great quantity of fine grit. Thickness 6 mm. The vessel was a small one, with a sharp and thickened shoulder and a flattened ledge rim. One shoulder fragment shows a roughly vertical perforation through the much thickened keel; another shows what appears to be an uncompleted vertical perforation. The vessel is undecorated except for faint finger-tip fluting diagonally on the upper surface of the rim.

I.B. 7 (figs. 16 and 38).—Very numerous fragments of a large vessel of coarse buff paste, verging in parts into brick red and blackened on parts of the interior: thickness 8 mm. The vessel is round-bottomed. The division between the body and the neck is marked by an irregularly pinched-out cordon of V-section. The diameter at this level is about 16 cm. Above this the neck begins vertically and then slopes outward to the rim, which is steeply bevelled internally. The cordon is decorated on its upper side by deep diagonal stabs, the neck by lines deeply incised with a sharply pointed instrument and curving upwards and to the left. The inner bevel of the rim is incised with two rows of irregular diagonal strokes, the strokes in the lower row sloping in parts in the same direction with, in parts in the opposite direction to, those in the upper row. There are indications of a horizontal lug now sheared off at one part of the cordon. Some of the fragments were found in stratum C.

I.B. 8 (figs. 15 and 37).—Numerous fragments, including the complete bottom and three rim fragments, of a vessel of fairly coarse gritty paste, grey to drab in colour but verging to putty colour on the outside and considerably blackened inside: thickness 7 mm. The vessel is round-bottomed; there is no trace of any shoulder, and the neck slopes outwards. The rim, which has a diameter of about 17 cm., is thickened, rounded on its outer side, and bevelled on its inner side. This bevel is decorated with two horizontal rows of short stabs; otherwise the vessel is plain.

I.B. 9 (figs. 17 and 38).—Vessel (restored) of fairly coarse grey paste, reddish in places and mixed with large grit. From a round bottom the wall curves round to the vertical at a sharp shoulder, above which it curves inward to form a slightly hollow neck. The rim is slightly everted and bevelled internally. Height 17 cm., diameter at shoulder



Fig. 16. Vessel I.B. 7. (1.)



Fig. 17. Vessel I.B. 9. (1.)



Fig. 18. Vessel I.C. 1. (1.)



Fig. 19. Vessel I.C. 2. (1.)

17.5 cm., at rim 16 cm. Decorated on neck with sets of short horizontal stabs placed vertically or in irregular diagonals.

I.B. 10 (fig. 37).—Minute fragment of a flattened rim of fine grey paste.

I.B. 11.—Small fragment of fairly fine grey paste, buff on outer surface, 7 mm. thick, showing fine shallowly grooved parallel lines.

I.B. 12 (fig. 37).—Rim fragment of fairly coarse paste, greyish buff on the surface and dark grey within. From a thickness of 6 mm. the wall thickens and slopes outward to a flattened rim 10 mm. in width.

Twenty-nine other fragments, representing not less than eight vessels, including one flat-bottomed vessel, were also found in this stratum. Three minute fragments showed incised decoration, and one decoration with shallow grooves.

Stratum C.

I.C. 1 (figs. 18 and 38).—Vessel (restored) of moderately coarse paste, generally grey in colour but verging to buff at parts of outer surface, which in the neighbourhood of the shoulder shows signs of burnishing. Height 9.5 cm., diameter at rim 10.5 cm., at shoulder 11.5 cm. Thickness 7 mm. From a round bottom the wall curves regularly, reaching the vertical at the sharp shoulder, from which it curves inwards to form a hollow neck and then outwards to the rim. The rim is slightly thickened and everted. The decoration is formed by long shallow curvilinear grooves. These reach from the shoulder nearly to the bottom, forming groups of parallel curves set diagonally, successive groups round the vessel being in opposite directions. The neck is similarly decorated with groups of parallel curves set diagonally, successive groups being in opposite directions. The fragments of this vessel were found vertically under those of *I.B.* 7.

I.C. 2 (figs. 19 and 38).—Vessel (restored) of fairly coarse grey paste, verging to brick red on parts of the outer surface. The outer surface shows burnishing. Height 17.5 cm. Diameter at rim 19 cm. Thickness 7 mm. From a round bottom the wall curves regularly until reaching nearly the vertical, and thence is straight. 2 cm. below the rim is a large horizontally set lug at one side of the vessel: on the opposite side the outer surface is shaled off where a corresponding lug has been. Just below and to the left of the lug the wall is pierced by a hole tapering from the outside, the section being oval, 5 mm. by 4 mm. The hole was bored after firing. This may be a mending hole, but on the opposite side there is an irregular cavity which conceivably represents an incomplete corresponding hole. At the level of the lug the wall is slightly thickened. The rim is very slightly incurving and is rounded over. Undecorated.

I.C. 3 (fig. 37).—One minute rim fragment, one shoulder fragment, and two other small fragments of moderately fine dark grey paste. Thickness 5 mm. The rim slopes outwards and is not thickened. The wall curves inwards very sharply at the shoulder, which shows a diameter of about 10 cm. Undecorated.

I.C. 4.—Fragment and some minute fragments of fairly fine paste, grey within and buff on both surfaces: the outer surface is much burnished and blackened in places. Thickness about 8 mm. Undecorated.

Section II.

Stratum B.

II.B. 1 (fig. 20).—Eighteen fragments of fairly coarse dark grey paste, buff externally: average thickness 8 mm. The incised decoration is



Fig. 20. Vessel II.B. 1. ($\frac{1}{4}$.)

formed of small chevrons arranged in bands and divided by groups of horizontal lines. There was a plain band round the belly of the pot. One fragment found in section III., stratum B.

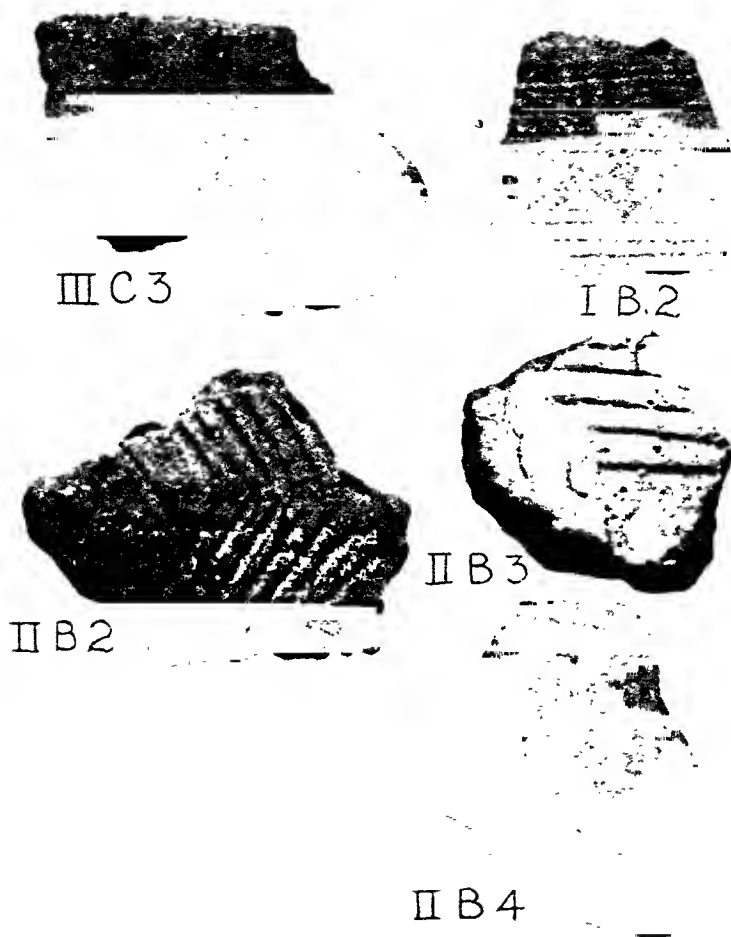


Fig. 21. Vessels I.B. 2, II.B. 2, II.B. 3, II.B. 4, and II.C. 3. ($\frac{1}{2}$)

II.B. 2 (fig. 21).—Three contiguous fragments of a vessel of fairly coarse grey paste, buff on outer surface: average thickness 11 mm. Surface burnished and decorated with bold parallel chevrons formed by deep grooves.

II.B. 3. (fig. 21).—Fragment of fairly coarse grey paste, 10 mm.

thick. Outer surface covered with buff slip and decorated with short parallel grooves.

II.B. 4 (fig. 21).—Fragment of fine grey paste, buff externally; thickness 8 mm. Plain except for two fine incised lines across one corner.

II.B. 5.—Fragment of moderately coarse paste, buff outside and black within, 7 mm. thick. Decorated with irregular lines incised with a fine instrument.

II.B. 6 (fig. 22).—Fragment of coarse reddish paste, grey externally,



Fig. 22. Vessels *III.B. 1* and *II.B. 6*. (1.)

badly shaled off: apparently part of a sharp shoulder sloping inwards above; pierced through just above shoulder by an oval hole 7×5 mm. tapering inwards.

II.B. 7.—Small fragment of fine paste, light buff in colour, 5 mm. thick. Decorated with parallel finely incised lines.

Stratum C.

II.C. 1 (figs. 23 and 38).—Bowl (restored) of coarse paste, grey to reddish drab in colour, mixed with coarse grit and stones. Height 15 cm., diameter across mouth 16.5 cm., thickness of wall 7 mm. From a round bottom the wall diverges slightly and then curves more sharply outwards to form the shoulder. Above the shoulder the wall curves inwards to form a hollow neck, and then curves out again to a slightly thickened rim bevelled outwards. The hollow neck is decorated with a band composed of sets of vertical, alternating with sets of horizontal, lines irregularly incised with a sharp instrument.



Fig. 23. Vessel II.C. 1. (1.)



Fig. 24. Vessel II.C. 2. (1.)

II.C. 2 (figs. 24 and 38).—Bowl (restored) of thin and moderately fine paste, dark grey to buff in colour. Height 12 cm.: diameter at rim 11.5 cm.: thickness at rim 5 mm. From a round bottom the wall curves to the vertical at a sharp shoulder, from which it bends sharply inwards to a slightly convergent neck. The thin rim is in line with the neck and is rounded on the top. The vessel is decorated from rim almost to its base with horizontal grooves very deeply cut in the upper part and less deeply in the lower part. Some irregular strokes are drawn diagonally below the lowest horizontal groove.

Section III.

Stratum B.

III.B. 1 (fig. 22).—Fragment of fine, hard grey ware, 5 mm. thick. Decorated with a horizontal band of five broad and very shallow grooves.



Fig. 25. Vessel III.C. 1. (1.)

from the upper edge of which a set of five parallel narrow grooves strike upwards diagonally.

III.B. 2 (fig. 37).—Rim fragment of somewhat gritty grey ware,

8 mm. thick but thinning towards the rim, which is simple with a slight internal bevel.

Stratum C.

III.C. 1 (figs. 25 and 39).—Vessel (restored) of coarse paste. The inner surface is grey; the outer surface is grey in the upper part of the vessel, reddish and considerably shaled off in the lower part. Height 22.5 cm.; diameter at rim 21–22 cm.; thickness at rim 9 mm. From



Fig. 26.

Fig. 26. Vessel III.C. 2. ($\frac{1}{2}$.)

a round and somewhat pointed base the wall curves outwards to a thickened shoulder, above which the hollow neck flares outwards to a simple rim slightly bevelled externally. The thickened shoulder expands into a long horizontal lug, and on the opposite side of the vessel are indications of a similar lug. The lower part of the vessel is plain. The thickened shoulder and the lug are decorated on their upper surface with a row of large circular pits; the flat bevel of the rim is decorated with similar but smaller pits. The hollow neck is decorated with wide grooves curving upwards and to the left round three-quarters of the periphery; round the remaining quarter the grooves are narrower and deeper and run vertically upwards or to the right. An accurately circular hole 3 mm. in diameter has been drilled (after firing) through the hollow neck in a place where it interferes with the decoration, and another has been partly drilled close alongside it.

III.C. 2 (figs. 26 and 39).—Vessel (restored) of coarse, gritty paste baked hard. The colour is grey internally and grey to red externally. Height, 17·5 cm.; diameter at rim, 17·5 cm.; thickness at rim, 12 mm. From a round base the wall curves upwards to a slight shoulder above which is a hollow neck curving out to a thickened rim with a slight internal bevel. The vessel is markedly unsymmetrical. The only decoration is on the flat, internal bevel of the rim, and consists of a double row of faint jabs in one part and of short diagonal strokes in another.

III.C. 3 (figs. 21 and 37).—Two contiguous rim fragments of fine smooth paste, buff in colour but blackened in places. Thickness 5–6 mm. The fragments have been part of a small bowl with walls curving outwards to a simple, thinned rim.

Twenty-one other fragments belonging to at least two vessels were also found in this stratum.

Section IV.

Stratum B.

IV.B. 1 (fig. 27).—Two contiguous and one other fragment of fairly fine paste mixed with a quantity of fine grit, black internally and on



Fig. 27. Vessel IV.B. 1. (1.)

inner surface, dark buff on outer surface. Thickness 5-7 mm. These appear to have been part of a small shallow bowl. This has been surrounded by a band defined above and below by two incised lines, and filled by parallel incised lines set diagonally. There are faint indications of similar diagonal lines above the band.

IV.B. 2.—Base fragment of fine paste with smoothed surface, greyish brown in colour, 7 mm. thick. This has been part of a flat base from which the wall of the vessel spread out widely. Undecorated.

Section V.

Stratum C.

V.C. 1 (figs. 28 and 39).—Deep bowl (restored) of coarse ware reddish to grey in colour and shaled off in parts. Height, 14.5 cm.: diameter



Fig. 28. Vessel V.C. 1. ($\frac{1}{2}$.)

at rim, 13 cm.: thickness at rim, 6 mm. From a round and slightly pointed base the wall curves to a slight shoulder, set above the greatest diameter, above which is a markedly hollow neck curving out to a thin and much everted rim. The round bottom is plain. The belly is decorated all over with long, deeply incised strokes set in lines sloping

downward to the right. The neck is decorated with similar strokes, but set in lines sloping downward to the left, except in a small part of the periphery where they slope downwards to the right. The interior surface of the rim is decorated with similar long strokes set diagonally.



Fig. 29. Vessel V.C. 2. (1.)

hollow neck and outwards again to a slightly thickened, rounded rim. The shoulder is decorated with diagonal stabs on its upper surface and the neck, with incised curvilinear lines set in two or more groups alternately sloping diagonally to the left and the right. Three fragments were found in section VI.

V.C. 2 (figs. 29 and 39).—Substantial part of a vessel of coarse paste mixed with much grit but smoothed on the outer surface. The colour varies from dark grey to dark buff. Thickness of neck 6 mm.; of lower part 7–8 mm. From a round base the wall curves round to a straight wall sloping outwards to the thickened shoulder at which the diameter of the vessel is about 15 cm. Above this the wall curves inwards to a



Fig. 30. Vessel VI.C. 1 with decoration on top of Rim shown above. (1.)

Section VI.

Stratum C.

VI.C. 1 (figs. 30 and 37).—Contiguous rim and neck fragments of moderately coarse paste, dark grey externally and buff internally; thickness 6–7 mm. Diameter at rim about 12 cm. The neck is straight, sloping outwards to a broad ledge rim. The neck is decorated with a band of parallel, diagonal grooves, above which are two horizontal grooves. The flat top of the rim is decorated with close, parallel grooves set diagonally.

DESCRIPTION OF STONE OBJECTS.

Granite (fig. 31).—Two objects of fine-grained granitic rock, possibly from a vein in the gneiss, were found in the pit in which Q. 2 stood. One is in the shape of a flattened ball, 8 cm. in diameter and of a maximum thickness of 5·5 cm. Its upper and lower faces, which are only slightly rounded, are smoothed; the remainder of its surface is roughened, as a



Fig. 31. Objects of Granite from Forecourt (above) and of Pumice from section I., stratum C, in Chamber (below). (Approx. $\frac{1}{2}$.)

result of battering. The other has a slightly hollowed base and two slightly flattened sides parallel to one another and at right angles to the base, but otherwise approximates to a sphere of about 7 cm. in diameter. The base is smoothed, and there are signs of battering in places elsewhere.

Pumice (fig. 31).—A piece of pumice 10·5 cm. by 8 cm. by 7 cm. high was found 6 inches above the floor in section I. of the chamber. Its base is rubbed flat; its irregularly rounded upper surface conveniently fits the hand for use in rubbing.

Jasper.—Several pebbles of ferruginous jasper, possibly humanly broken, were found in the forecourt to the east of Q. 2.

Quartz.—A large pebble of white quartz, heavily battered at one end

and slightly battered at the other, was found on ground-level at the junction of the south façade with the peristalith.

DESCRIPTION OF IRON AGE POTTERY.

It is not proposed to attempt a detailed description of the great quantity of Iron Age pottery found. Only a small number of the fragments were decorated or gave any indication of profile. The vessels

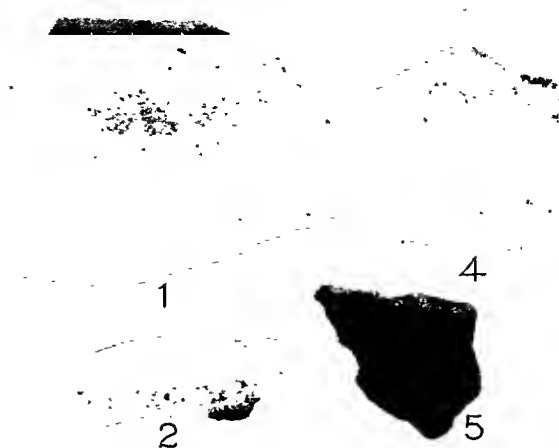


Fig. 32. Iron Age Pottery from bank across Forecourt. (1.)

represented varied from large pots, up to $\frac{3}{4}$ inch thick, irregularly made of coarse clay mixed with great lumps of quartz, to well-made vessels, as little as $\frac{3}{16}$ inch thick, of paste mixed with fine grit and in some cases well smoothed externally. Some of the coarse vessels have been built up in rings.

The distinctive types of decoration, and of rim and base section, are shown by the thirty vessels illustrated in figs. 32-35 and 40 and numbered 1-30. Of these vessels Nos. 1-7 come from the bank across the forecourt, Nos. 8-10 from stratum A of the chamber, Nos. 11 and 12 from the cairn surface as denuded by the fort builders, and Nos. 13-30 from the fort itself. Attention is called below to the principal types.

No. 1 (figs. 32 and 40) from the bank represents a type of vessel found also in the fort in No. 16 (figs. 34 and 40) and No. 17 (fig. 34). These vessels, which are crudely made, have vertical bulging necks and markedly everted rims. They are decorated round the neck with a band of large incised triangles, and immediately under the rim with a

line of jabs. In No. 1 these jabs invade the band of triangles. No. 4 (fig. 32) from the bank probably comes from the neck of a vessel of the same type, and here the jab decoration is still more prominent.

No. 2 (figs. 32 and 40) from the bank represents a type of rim of which



Fig. 33. Iron Age Pottery from the bank across the Forecourt (No. 7); from the Fort drain (No. 13); from the Fort entrance passage (Nos. 25, 27, and 28). (1.)

two other fragments were found in the bank, the number of vessels represented being at least two. From a thin neck the rim spreads out widely both internally and externally, and its upper surface is hollowed along its length. This hollow is decorated by a line of pin-pricks.

No. 5 (figs. 32 and 40) from the bank is a fragment of a similarly thickened rim, but its upper surface is approximately flat and is undecorated.

No. 6 (fig. 40) from the bank is a small fragment of an externally

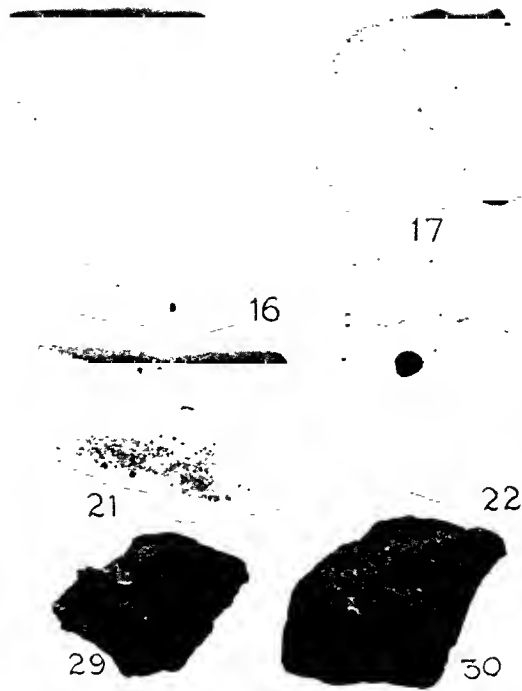


Fig. 34. Iron Age Pottery from Fort. Nos. 16, 17, and 22 from entrance passage;
No. 21 from exterior; Nos. 29 and 30 from interior. (1.)

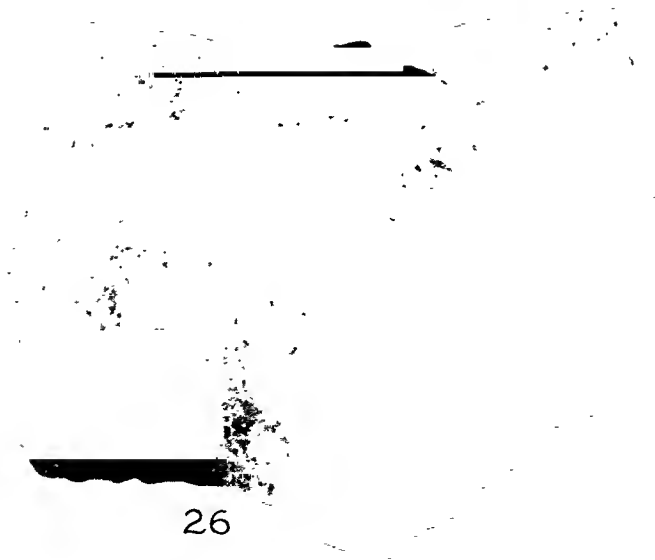


Fig. 35. Iron Age Vessel (No. 26) from interior of Fort. (1.)

bevelled ledge rim, which is common in Neolithic pottery, and may in fact be Neolithic.

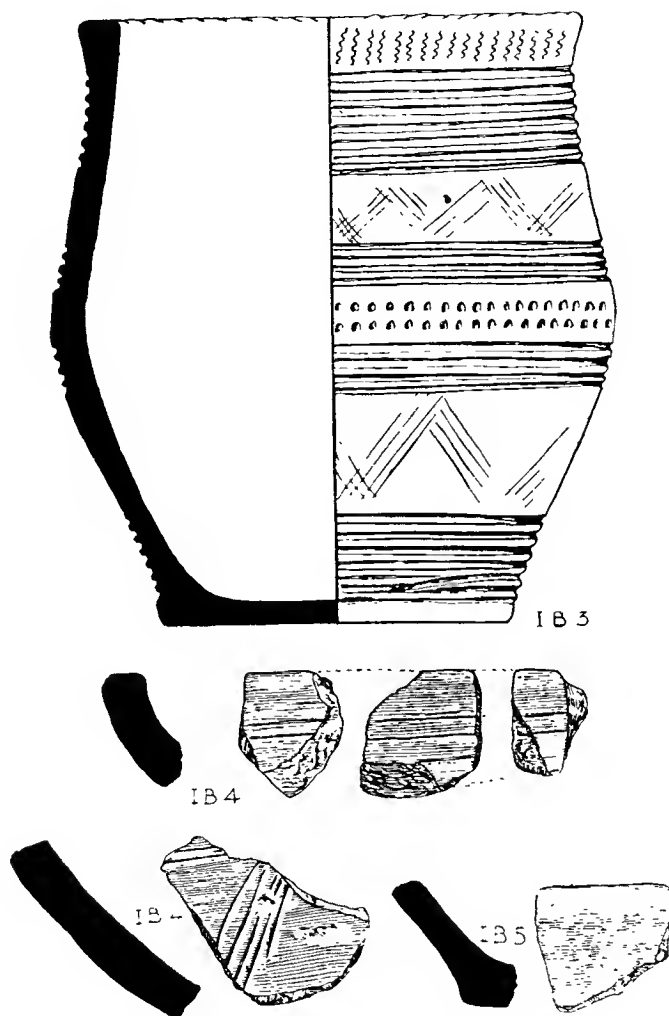


Fig. 36. Pottery from Chamber. (1.)

No. 7 (fig. 33) from the bank is a small fragment with incised decoration, which is probably of the same general type as Nos. 1, 16, and 17 described above.

No. 8 (fig. 40) from stratum A of the chamber (section IV.) is a type of rim with a heavy and somewhat hollow internal level, which

is represented also by a fragment from the bank. No. 8 is decorated on the outside with vertical incised lines.

No. 9 (fig. 40) from stratum A in the chamber is a fragment of a thick vertical neck thinning to a simple rounded rim. The type is represented again by No. 15 (fig. 40) from the entrance passage of the fort.

No. 13 (fig. 33) is the only distinctive fragment from the drain through

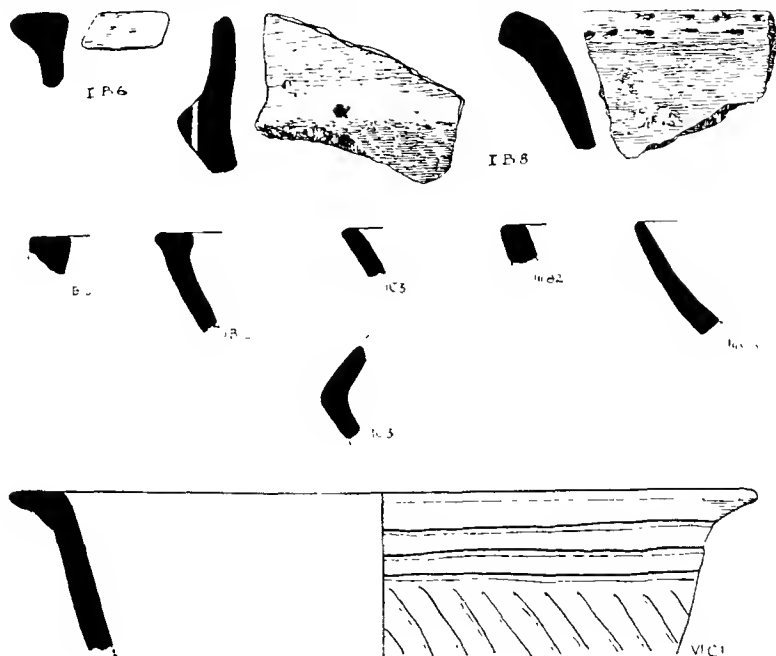


Fig. 37. Pottery from Chamber. ($\frac{1}{2}$.)

the fort entrance. It is a thin fragment of fairly fine, light grey paste, with a pattern of faintly incised lines meeting at right angles.

No. 14 (fig. 40) from the entrance passage of the fort is a fragment of an outcurving rim, flattened on the top, and decorated internally by faint and rather irregular diagonal grooves. It is possibly a Neolithic stray.

No. 18 (fig. 40) from the entrance passage of the fort is a well-made rim of brick-red, sandy ware, rising from a constricted neck and curving slightly outwards.

Nos. 19 and 20 (fig. 40) and 21 (figs. 34 and 40), all from the fort, are rim fragments of ware similar to No. 18. The rims are straight and slightly flattened on the top, rising vertically from a constricted neck. The interior of No. 19 is marked with shallow horizontal grooves.

No. 22 (fig. 34) is a fragment of fairly thin but very coarse ware,

showing a hole pierced after firing. This is the only pierced fragment found.

No. 25 (fig. 33) is one of a number of fragments from the entrance passage of a vessel, probably globular in shape with some eversion of the rim, well made of fine, gritty paste, smoothed externally, and about $\frac{1}{4}$ inch thick. The piece illustrated probably comes from just below the rim, and its decoration suggests a band of large triangles finely incised, the lines being crossed with short strokes.

No. 26 (figs. 35 and 40) from the interior of the fort is a large rim fragment of a globular vessel of similar paste to No. 25, well made, and smoothed externally. A continuous band of incised herring-bone decoration stretches from the rim down to a very small applied band decorated with a fine zigzag pattern.

Nos. 27 to 30 (figs. 33 and 34) are examples, all from the fort, of "finger-tip" decoration. Nos. 27 and 29 show a band of festoons worked up from the body of the vessel with a flat, pointed slip of bone or wood. No. 28 shows a very thin, flat cordon decorated with finger-tip impressions pressed in at right angles. No. 30 shows a thick cordon impressed irregularly so as to produce a twisted effect.

The types of base represented are shown in fig. 40 by No. 3 from the bank across the forecourt, No. 10 from stratum A in the chamber, No. 11 found immediately south of P. 11, No. 12 found east of Q. 2, and Nos. 23 and 24 from the fort.

It may be noted that no fragments showed sharp shoulders.

DESCRIPTION OF CHARCOAL.

Specimens of charcoal were examined by Mr M. Y. Orr of the Royal Botanic Garden, Edinburgh. Those from the fort were of Scots pine. On the charcoal from the chamber Mr Orr reports as follows:—

"The condition of the charcoal from Clettraval is such that microscopic examination is impossible, and determination of its identity was based on macroscopic features alone. So far as it is possible to say in these circumstances the wood appears to be that of the birch throughout, which is in accordance with similar finds made elsewhere. The diagnostic features are the relatively small, frequently septate, pores and biseriate rays."

COMMENTS.

Structure of the Tomb.—In its method of construction the tomb is clearly a near relation of the Clyde type of chamber tomb, which is

sometimes, though I think unfortunately, called a "long cist." In what is generally regarded as its earliest form, best represented in Arran,¹

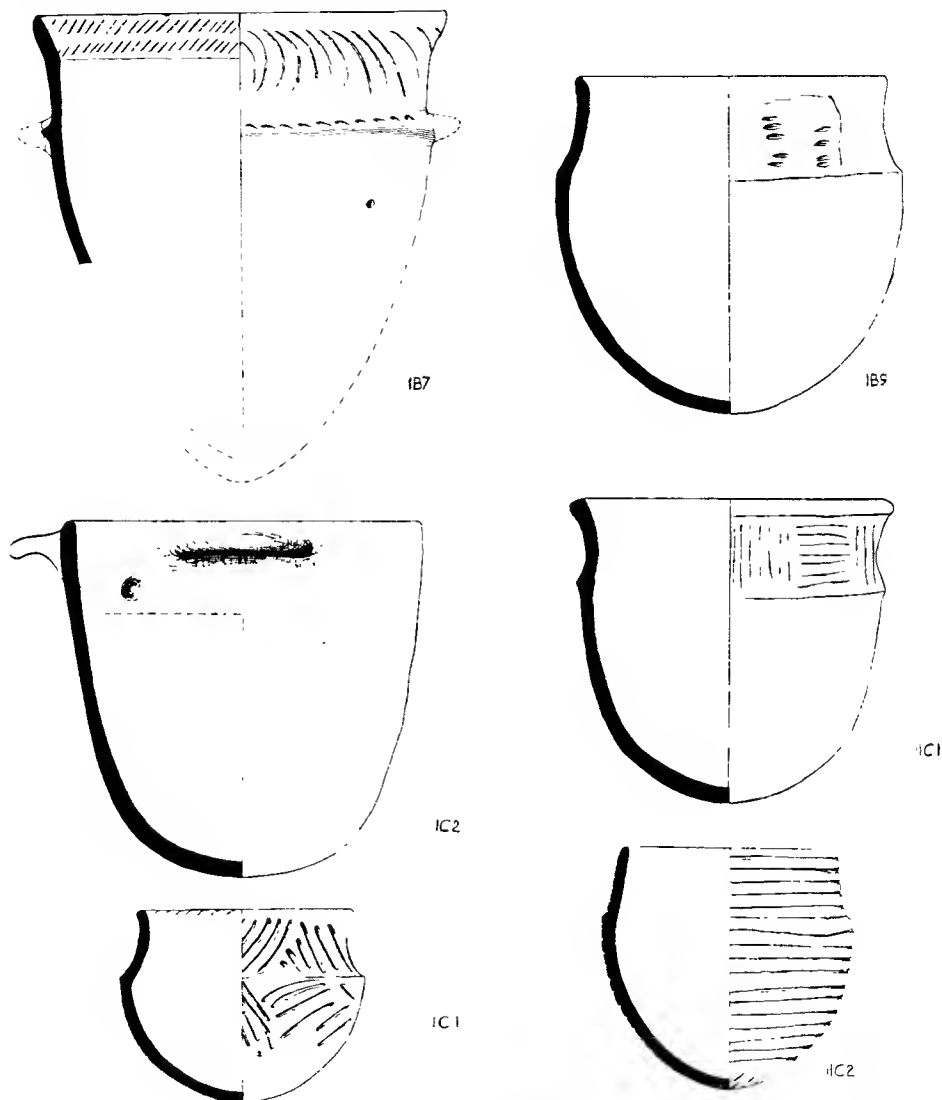


Fig. 38. Pottery from Chamber. (1.)

this is a long narrow chamber divided into sections by septal slabs, with orthostatic walls leaning inwards and supported either by overlapping

¹ T. H. Bryce, *Proc. Soc. Ant. Scot.*, vol. xxxvi, pp. 74 ff.; vol. xxxvii, pp. 36 ff.; and vol. xxxviii, pp. 17 ff.

their next neighbour or by the septa. It is roofed by a corbelled barrel vault, and opens directly on to a semicircular forecourt with an ortho-

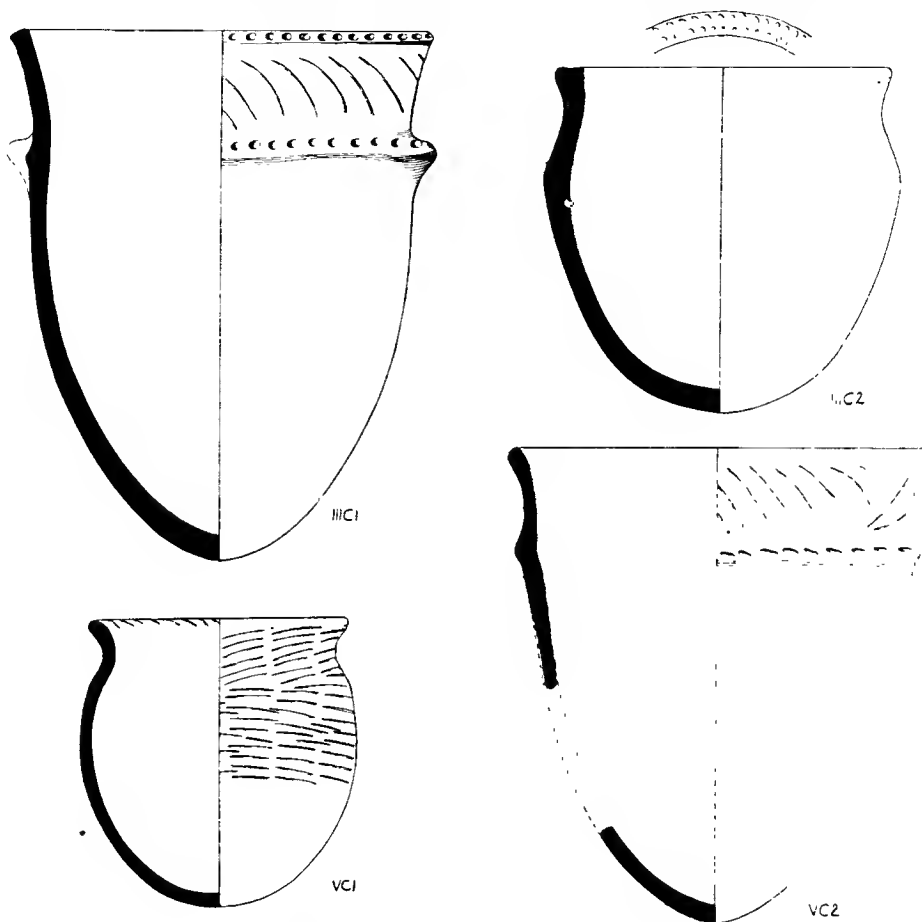


Fig. 39. Pottery from Chamber. (4.)

static façade. The peristalith is rectangular or wedge-shaped in plan, and the whole is covered by a long cairn.

The type is spread in Scotland from Galloway to Argyle and over the islands.¹ A degenerate example is found as far north-east as Kintdrochat in Perthshire,² and in the Hebrides certain tombs were provisionally classified as belonging to the type by the Scottish Historical

¹ For a study of the distribution see C. Fox and W. F. Grimes, *Arch. Camb.*, June 1928, pp. 137 ff.; and V. G. Childe, *The Prehistory of Scotland*, pp. 25 ff.

² V. G. Childe, *Proc. Soc. Ant. Scot.*, vol. lxiv, pp. 264 ff.; and vol. lxv, pp. 281 ff.

Monuments Commission.¹ Recent excavation has shown that it extended to Northern Ireland, where a tomb at Goward, Co. Down, provides a

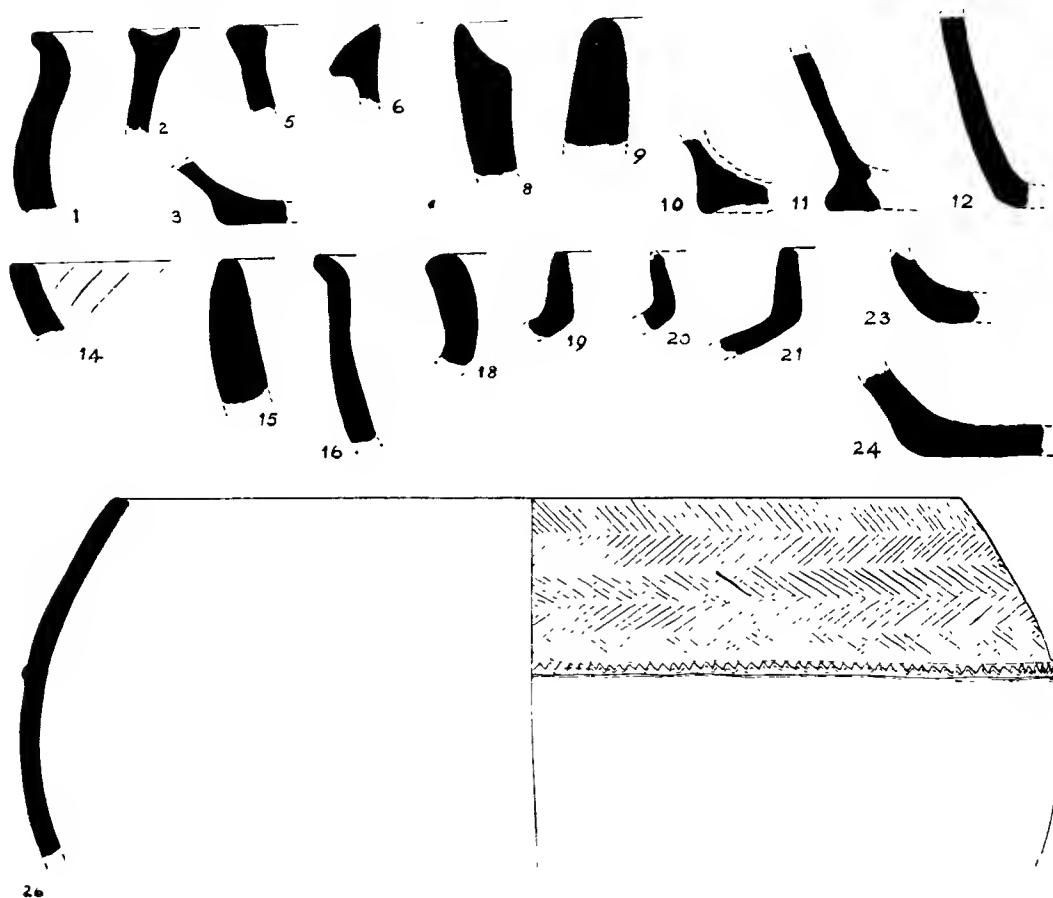


Fig. 40. Pottery from bank across Forecourt (1 to 6); from stratum A in Chamber (8 to 10); from south of P. 11 (11); from east of Q. 2 (12); from Fort (14 to 26). ($\frac{1}{2}$.)

good example of the type.² In England two of the five chambers in Minning Low, Derbyshire, appear generally similar.³ Sir Cyril Fox and Mr Grimes in the paper quoted in note 1 on p. 523 suggest that Corston Beacon, Pembrokeshire, though a true long cist, *i.e.* a closed box, derives ultimately from this stream of the chamber tomb tradition, and further

¹ *Outer Hebrides, Skye, and Small Isles*, 1928, p. 29.

² O. Davies and E. E. Evans, *Belfast Nat. Hist. Soc.*, 1932-33, pp. 1 ff. For a valuable study of the distribution of the type in Northern Ireland, see E. E. Evans and Miss M. Gaffikin, *Irish Nat. Journ.*, vol. v., No. 10, July 1935.

³ For plans see C. Fox and W. F. Grimes, *op. cit.*, *supra*.

quote, as possible examples of the type, tombs in Southern Ireland, Cornwall, and N.E. Spain. It was Professor Childe,¹ however, who first worked out the derivation of the type from chamber tombs in south-west France and Catalonia.

Clettraval agrees with the type as represented in Arran in its peristalith wedge-shaped in plan, its overlapping and inward leaning walls, its septal slabs and, probably, in its roofing. It disagrees in having section I. of its chamber, and to a lesser degree section II., much wider than the remaining sections, and in having a rectilinear façade set backward from the forecourt axis. The former difference connects it with the type of tomb structure composed of chamber, antechamber, and passage, which stretches from Caithness to Southern Iberia.

The rectilinear façade set back at more than a right angle from the forecourt axis does not seem to be precisely paralleled,² but is presumably to be connected with the flat façade which, though less studied than the crescentic one, is perhaps of not less importance as an early type. In England, Wayland's Smithy, Berkshire, had a flat façade,³ and so had some Menorcan *navetas*.⁴ It is interesting to note that the tomb of Midhowe, Orkney, which so closely resembles a *naveta*, had a flat end.⁵ Rectangular forecourts exist in Almeria.⁶ The type may ultimately derive from the tomb cut into a flat rock-face, vertical or sloping, such as occurs in Mallorca, Sicily, and the Ægean.⁷

The double curve in the axis of the chamber, if, as is probable, it is not the result of accident, is a rare feature. The *allée coulée* of Brittany normally makes a single bend, and that through a right-angle, though in Les Pierres Plates⁸ the angle is smaller. The chamber of Gavv' Inis,⁸ Southern Morbihan, makes a double bend, but it is a very slight one and may not be intentional. Moreover, these Breton tombs are widely different in type from Clettraval, and may quite possibly be later in date. It is of interest to note that in Puig Rodo, Catalonia, a tomb which is of the type believed by Professor Childe to be ancestral to the Clyde type, the outer of the three sections of the chamber appears from the

¹ V. G. Childe, *Glasgow Arch. Soc. Trans.*, November 1931, pp. 120 ff.

² As stated above, however, the façade of the neighbouring chamber tomb of Unval may turn out to be of this type.

³ T. D. Kendrick and C. F. C. Hawkes, *Archæology in England, 1914 to 1931*, p. 63.

⁴ W. J. Hemp, *Ant. Journ.*, vol. xii, pp. 127 ff.

⁵ J. G. Callander and W. G. Grant, *Proc. Soc. Ant. Scot.*, vol. lxxviii, pp. 320 ff.; cf. W. J. Hemp, *Proc. Prehist. Soc.*, 1935, pp. 108 ff.

⁶ L. Siret, *L'Espagne Préhistorique*, p. 40.

⁷ Compare, for example, Tomb No. 7 in Mallorca, which also had a rectangular forecourt, W. J. Hemp, *Archæologia*, vol. lxxvi, pp. 121 ff.

⁸ Plans in Péquart and le Rouzic, *Corpus des Signes Gravés des Monuments Mégalithiques de Morbihan*, 1927.

plan available to have been set at an angle to the axis of the inner sections.¹ There is, of course, nothing *prima facie* unreasonable in a curving passage, which is a common feature of domestic architecture in the higher latitudes.

Like Clettraval, the chamber tomb of Bryn Celli Ddu,² Anglesey, has a free-standing pillar, which was placed on the north side of the single chamber, just clear of the wall. Mr Hemp has shown that this did not quite reach the roof, and served no structural purpose. There is a pillar somewhat similarly placed in the main chamber of Le Déhus,³ Guernsey, which reached the roof, and may have been placed to support a cracked cover stone. Lukis, however, found a deposit of human bones and pottery at the foot of the pillar, and had no doubt that this had been placed against and around its base after its erection: it is possible, therefore, that it served a ritual purpose, whether or not it also served a structural one. Pillars are a common feature of Iberian corbelled tombs;⁴ their purpose is assumed to have been structural. The position of the Clettraval pillar makes it somewhat unlikely that it was structural, and it is probably to be compared with the ritual pillar of Bryn Celli Ddu.

The area partitioned off in section I.—if this is the correct interpretation of the facts—can be paralleled by the similar enclosures in the chamber of Marcella, Algarve.⁵ At Unstan, Orkney, both end sections of the transversely set gallery were partitioned off, and one of these was subdivided into two by a slab.⁶ At Midhowe, Orkney, the end section was divided transversely by slabs, and two skulls were found in the inner part; in the outer part a small area was partitioned off, but was empty.⁷ In the outer section of the chamber of the second long cairn at Yarrows, Caithness, was a cist containing cord-decorated sherds and a necklace of disc-shaped lignite beads: from these finds it is doubtful whether it formed an original element in the tomb.⁸ In the inmost and largest of the four sections of the chamber at Largie, Kilmartin,

¹ L. Pericot, *La Civilización Megalítica Catalana*, 1925, pl. i., No. 14 (not 13 as stated in the key to the plate).

² W. J. Hemp, *Archæologia*, vol. lxxx, pp. 179 ff.

³ T. D. Kendrick, *Archæology of the Channel Islands*, vol. i, pp. 133, 134, 139, and 140.

⁴ Cf. Los Millares, Tomb 17 and Almizarque in Almería, a tomb at Gor in Granada and Cueva de Menga, Antiquera, the last of which is a slab-roofed tomb. Plans of these are in Obermaier, "El Dolmen de Matarrubilla," *Com. de Invest. Paleont. y Prehist.*, No. 26 (1919).

⁵ Drawing and plan in Åberg, *La Civilisation Énéolithique dans la Péninsule Ibérique*, p. 18, after Cartailiac.

⁶ J. Anderson, *Scotland in Pagan Times*, vol. ii, pp. 292 and 293.

⁷ J. G. Callander and W. G. Grant, *Proc. Soc. Ant. Scot.*, vol. lxxviii, pp. 320 ff.

⁸ J. Anderson, *op. cit.*, vol. ii, pp. 239 and 240.

Argyllshire, which was a tomb of the Clyde type. Canon Greenwell found a cist in one corner empty of remains.¹

The purpose of such partitioned-off areas in chambers remains obscure, and Clettraval only throws light to the extent that the two relatively complete pots in section I., stratum C, were found within the enclosure.² Built enclosures are recorded, though rarely, in both rock-cut and tholos tombs in the Ægean, where they are presumably variants of the common feature of a pit dug in the floor of the chamber. Dr Wace, in his recent invaluable study of the funerary practice disclosed by the Late Helladic tombs of Mycenæ, concludes that the majority of pits were designed for an individual burial, though many of them were used, and some may have been originally constructed, as charnel pits for holding the bones and offerings remaining from former burials.³ The Clettraval enclosure may therefore be interpreted as designed for an individual burial.

The tripartite character of the peristalith at Clettraval may be compared with the arrangement at Pant y Saer, Anglesey.⁴ There, though on a much smaller scale, was a peristalith composed of an inner dry wall of limestone, an intermediate packing of grit stone blocks and an outer ramp of tilted slabs. At Pant y Saer this ramp might be interpreted, though not very plausibly, as a structural device intended to support the limestone wall against the pressure of the mound. This mechanical explanation would not be valid at Clettraval, where the fall of the ground would have prevented the slab ramp from giving any support to the great wall of upright blocks which formed the inmost element of the peristalith.

The only Scottish example known to me of the slab ramp as an element in chamber-tomb architecture is the somewhat uncertain one of Kindrochat, Perthshire,⁵ where it was not quite clearly differentiated from the surrounding wall. The element was first recognised by Mr W. J. Hemp in his excavations at Capel Garmon, Denbighshire,⁶ and was again found by the same excavator at Belas Knap, Gloucestershire,⁷ and at the great tomb in Plas Newydd Park, Anglesey.⁸ In all these instances it was regarded as a structural device to support the surrounding dry stone wall of the mound. In the light of the Clettraval evidence this explanation becomes doubtful.

¹ J. Anderson, *op. cit.*, vol. ii. p. 272.

² There is no doubt that the well-built cist already mentioned in the chamber of the Unival tomb served for an individual burial.

³ A. J. B. Wace, *Archæologia*, vol. lxxxii. pp. 136 and 137.

⁴ W. L. Scott, *Arch. Camb.*, December 1933, pp. 185 ff.

⁵ V. G. Childe, *Proc. Soc. Ant. Scot.*, vol. lxxv., fig. 1, sections.

⁶ W. J. Hemp, *Arch. Camb.*, June 1927, p. 12.

⁷ W. J. Hemp, *Trans. Bristol and Gloucestershire Arch. Soc.*, vol. li. (1929) p. 268.

⁸ Information from Mr W. J. Hemp.

The paved path in front of the forecourt façade at Cletraval is similar to a feature which was discovered by M. le Rouzic at Kercado, South Morbihan, where a broad causeway of closely packed stones surrounded the cairn immediately outside an ashlar wall, and curved in with the wall to the entrance of the chamber.¹ As has been pointed out, the paving at Cletraval joined on to the middle element of the peristalith, which was composed of a low wall of slabs laid horizontally: whether or not that was its intention, this did in fact serve as a path round the tomb. I do not know of any parallel to the built and paved path which led across the forecourt up to the entrance to the chamber.

Neolithic Pottery.—The types of Neolithic vessels represented raise questions wider than can usefully be considered here. It will be noticed, however, that, together with types well known in the Windmill Hill culture of southern England, there occur vessels elaborately decorated in grooved or incised technique, often over the body as well as the neck of the pot. The motives are groups of parallel lines, straight or curvilinear, sometimes forming a continuous band of uniform pattern round the vessel, and sometimes arranged in successive panels in which the lines run in opposing directions.

This type of pottery is found also at another North Uist site, Eilean an Tighe, where apparently it was manufactured on a considerable scale.² This site is on a tiny island in the Geireann Mill Loch, which has been partly submerged when the water-level was raised by the building of the mill dam. Pottery, polished stone axes, and flints were thus washed out of the soil and scattered on the sandy beach of the island, where they were noticed and collected by the late Dr Erskine Beveridge. These sherds and some others collected by himself were published by Dr Callander, who had the distinction of first realising their Neolithic character and the connection of some of them with Orkney pottery of Unstan type.³

It is to be observed that the stratification at Cletraval shows that this, apparently developed, type of pottery is not later in North Uist than the simple Windmill Hill forms, which at the type site occur in the lower level and are classified by Mr Stuart Piggott as Neolithic

¹ C. D. Forde, *American Anthropologist*, vol. xxxii., No. 1, pp. 71 and 72. See also the section of the tomb given in fig. 9 of M. le Rouzic's paper in *L'Anthropologie*, vol. xliii. (1933) p. 237.

² This site is in course of excavation by the author.

³ J. G. Callander, *Proc. Soc. Ant. Scot.*, vol. lxiii. pp. 29 ff.; and vol. lxviii. p. 335, note 1. See also Professor V. G. Childe's recent comparison of Unstan and Eilean an Tighe pottery with that from a tomb at Slieve na Caillighe, Co. Meath, *Journ. Roy. Soc. of Ant. of Ireland*, vol. lxxv. pp. 320 ff., December 1935.

A. 1.¹ Thus I.B. 9 and I.C. 2, which are Neolithic A. 1 types, were stratified respectively above and with a characteristic Eilean an Tighe vessel, I.C. 1. Further evidence that the simple and the developed forms existed contemporaneously in the Hebrides is forthcoming from the Eilean an Tighe site.

Clettraval is linked by its pottery, as well as its structural form, to the Clyde type of tomb: for, of the four restored vessels from the Arran tombs, three closely resemble I.C. 2, while the fourth, from Clach-aig, has, in cord decoration, the rare pattern displayed by I.C. 1, a pattern which appears again at another tomb of the same form, Becharra in Kintyre.² Thus the standard examples of the Clyde type of tomb, together with the Becharra type of pottery, could, on the stratification evidence of Clettraval, be equated with the lowest stratum of Windmill Hill, a due time-allowance being made for the spread of the culture. So simple a type as I.C. 2 may, however, have had a long life.

It would be beyond the scope of this paper to pursue these pottery types back to their continental origins, but it has been noted above that Professor Childe has derived the Clyde type of tomb from the Pyrenean area, and the possibility may be remarked that the pottery derives from the same source. It is fairly certain that at any rate the Eilean an Tighe type of decoration cannot be derived from English Neolithic A, and Mrs Hawkes' analysis of the pottery from cave sites in the Departments of Gard and Aude suggests an origin for this in Southern France. There is some evidence from stratification that, in those Departments, this pottery succeeds plain, uncarinated vessels with lugs, is contemporary with plain carinated vessels and precedes beakers.³

Many of the patterns from the Gard and Aude caves can be paralleled across the Pyrenees in Catalonia, where, unhappily, stratification evidence is not available. It is therefore worth noting that the pottery types at Clettraval, both carinated and uncarinated, which are wholly or almost undecorated, are closely similar to undecorated vessels in caves in Southern Catalonia, notably Cueva Fonda de Salamó, where the patterns of the Gard and Aude caves are also found. It is even the case that the Clettraval beaker, I.B. 3, which looks at least odd by British standards, is markedly like in its multiple rows of dots and of

¹ Stuart Piggott, *Arch. Journal*, vol. lxxxviii, (1931) pp. 67 ff.

² The Continental connections of the Becharra pottery generally, and of this pattern in particular, are studied by Professor V. G. Childe in *Arch. Journ.*, vol. lxxxviii, (1931) pp. 37 ff. The pattern appears in cord decoration in Northern Ireland among the Larne sherds in the Ashmolean Museum, Oxford (see *P.S.E.A.*, 1932, pp. 62 ff.). For the Arran pottery, see J. G. Callander, *Proc. Soc. Ant. Scot.*, vol. lxiii, pp. 29 ff.; for the Becharra pottery, see Stuart Piggott, *op. cit.*, *supra*.

³ Jacquetta Hawkes, *Antiquity*, March 1934, pp. 24 ff.

heavily incised lines to vessels of the Salamó type,¹ and that cardium decoration is common in that area. It is thus a possibility that Clettraval and tombs similar to it in type can be directly related, both as regards tomb form and as regards pottery types, with the Copper Age culture which spread across Catalonia and Southern France. If this were so it would follow, on the stratification evidence of the caves and of Clettraval, that the connection continued through a substantial period of time, during which beakers displaced the earlier pottery which in Britain is named "Neolithic."

Burning of Bones.—Attention should be drawn to the opinion of Miss Tildesley that the fragments of human bone recovered from the lowest stratum of section I. of the chamber must have been in immediate contact with a fire which consumed the parts of the body represented—before the flesh was decayed—as thoroughly as a cremation would have done. We know from Dr Wace's already quoted analysis of funerary practice at Mycenæ that tombs were fumigated with braziers or incense burners before a fresh burial was made in them, perhaps in order to drive out any lingering ghosts. In one of the Mycenæan tombs a fire had been lit, presumably to the same end, and this more radical method may be conjectured to be that belonging to a less sophisticated culture than the Late Helladic.² The practice is commonly now invoked, under the perhaps misleading name of purification by fire, to explain away the evidence of cremation in British chamber tombs, even where the burning was as thorough as it was in some of the long barrows of Yorkshire.³

It will be noticed that this practice will not explain the phenomena observed by Miss Tildesley except on the assumption that the tomb was re-opened and the fire lit so shortly after a former burial that a body remained undecayed in the chamber. There is nothing very unlikely in this assumption but, even if it were not a true one in the present case, I do not think that from the evidence of this mere handful of bones cremation should be inferred. Indeed, had even one complete cremation occurred among the many burials which took place in the chamber, more extensive remains might have been expected, for burnt bone is often preserved where unburnt is wholly decomposed.

Except in so far as precise and well-studied archæological data are

¹ Cf. Cueva Fonda de Salamó and Cueva del Cartanyà in Bosch-Gimpera, *Etnología de la Península Ibérica*, 1932, figs. 112 and 114, and discussion on p. 169. For Cueva Fonda, see also figs. 186 to 197 and 309 to 312 in Aberg, *La Civilisation Néolithique dans la Péninsule Ibérique*, 1921.

² A. J. B. Wace, *op. cit.*, pp. 144 and 145.

³ For example by Professor V. G. Childe, *Dawn of European Civilisation*, pp. 288 and 289. Cremation is, however, now attested in the Northern Ireland group of horned cairns of the Clyde type already mentioned.

available our only recourse is to modern funerary practice, and here such a variety of usages is found involving the application of fire that to rely on explanation in terms of one only, namely, purification by fire, is quite unsafe. Thus mutilation of corpses by fire, in order to incapacitate the ghost, can hardly be dismissed in the light of modern practice, when reliance is placed, in the case of Bronze Age burials, on mutilation by the breaking of limbs. Again, the passing of the returning burial party between or over fires to rid them of the accompanying ghost is attested as a recent usage and associated in intention with the practice of requiring them, for the same purpose, to creep through split tree trunks or holed stones.¹ Thus a fire within the tomb and a holed stone entrance might alike be means of ridding those who had deposited the body of the ghost that strove to return with them out of the tomb: while the twin fires at the entrances of Kercado in Morbihan² and Bryn Celli Ddu in Anglesey³ might have served the same purpose. These are mere possibilities, but a recognition of the possibilities open in the light of modern cults of the dead is of great assistance to the practical excavator seeking to recover evidence of the cults of prehistoric times.

Use of Stone Balls and Discs.—The carefully shaped stone objects found in the pit in which Q. 2 stood show no sign of practical use. A stone ball has been found on the floor of the chamber of the Unival tomb mentioned above. Two stone discs were found at the chamber tomb of Pant y Sær, Anglesey, one against the inner side of the peristalith, and one in much disturbed material in the chamber.⁴ A thick disc in the British Museum came from the chamber tomb of Keriaval, Morbihan, and a stone ball has recently been found immediately outside the peristalith of the larger Plas Newydd tomb in Anglesey.⁵ The position of the majority of these specimens against the peristalith suggests that their purpose, like that of rounded, white quartz pebbles similarly placed, was a ritual one.⁶

Iron Age Pottery and Date of the Fort.—In Professor Childe's recent book, *The Prehistory of Scotland*, we have for the first time a complete analysis of the Late Bronze and Early Iron Age pottery of Scotland, and, in the light of this, a tentative classification may be tried of the

¹ For examples of these practices, see J. G. Frazer, *The Fear of the Dead*, vol. ii, pp. 29 and 30, 33 ff., 53 ff., 70 ff.

² C. D. Forde, *American Anthropologist*, vol. xxxii., No. 1, p. 72.

³ W. J. Hemp, *Archæologia*, vol. lxxx, pp. 179 ff.

⁴ W. L. Scott, *Arch. Camb.*, December 1933, p. 223.

⁵ Information from Mr W. J. Hemp.

⁶ It may be worth noting that precise analogues to the Clettraval and Unival specimens have been found in "votive" deposits near to, and associated with, the "Mycenean" corbelled tombs of Minet el Beida, North Syria. (F. A. Schaeffer, "Ras Shamra," in *Syria*, 1929, pp. 286 ff., and 1931, pp. 1 ff. and pl. xiii.)

pottery at Cleittraval attributable to the users of the fort and of the secondary structures built in its ruins. It will be recollected that the sherds from the bank across the forecourt constituted a closed deposit which in all probability belonged to the period of the use, if not of the building, of the fort, whilst those from the fort itself might be either of that period or of that of the fort's decay.

An analysis of the pottery shows one marked distinction between the sherds from the fort itself and those from the bank and other parts of the site, namely, that decoration in the shape of a crinkled- or finger-printed band (as in Nos. 27-30) is very common among the former, but it is entirely lacking among the latter. This type of decoration is extremely common in Hebridean brochs and earthhouses, the use of which coincided, at least in part, with the Roman period; its absence from the bank is evidence that this, and therefore the fort itself, was built before the introduction of the style.

The origin of this type of decoration does not seem to have been discussed, but must presumably be sought in the finger-tip and finger-nail style introduced by the Urnfield and Hallstatt invaders of Britain.¹ On this view the crinkled band, formed with a pointed slip of bone, either on the pot itself (Nos. 27 and 29) or on an applied cordon (No. 30), would be a local Hebridean development of the band of finger-tip and finger-nail impressions seen in its simplest form in No. 28 and in a number of examples from brochs and wheelhouses. The crinkled band extends northward to one Caithness broch (Everley)² and southward to forts in Coll and Tiree,³ but is not elsewhere found outside the Hebridean area. The finger-tip markings impressed at right angles on the body of the vessel or on an applied cordon occur, on two or three sherds, in the lowest level at Traprain,⁴ and are common at Scarborough.⁵ Finger-tip impressions occur in Phase II. at Jarlshof, but only on the top of the rims.⁶ There is no need, however, to seek further for the source whence finger-tip decoration reached the Hebrides than the south-west of England, from which area, as Professor Childe has shown,⁷ large elements in the broch culture derived.

Of the few other decorated sherds, No. 1 from the bank and Nos. 16 and 17 from the fort show a horizontal band of incised triangles together

¹ For a recent discussion of this pottery, see C. F. C. Hawkes, *Proc. Prehist. Soc.*, 1935, pp. 39 ff.

² J. G. Callander, *Proc. Soc. Ant. Scot.*, vol. lxxv, p. 348.

³ Erskine Beveridge, *Coll and Tiree*, plates, Pottery from Duns, Nos. 1 and 8.

⁴ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lvm, p. 257.

⁵ For Scarborough, see R. A. Smith, *Archæologia*, vol. lxxvii, pp. 179 ff.

⁶ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 288.

⁷ V. G. Childe, *The Prehistory of Scotland*, pp. 237 ff.

with jabs and circular depressions. No. 4 seems to be of the same general type. All the motives can be paralleled from All Cannings Cross,¹ and a precise analogy to the band of triangles occurs in the lowest level at Jarlshof;² the forms of these sherds can be paralleled at both sites. The motive survives into broch pottery but in a debased form, the triangles becoming sketchy and obscured by hatching; indeed, the whole broch style has tended to the freehand, and away from the geometrical. No. 7 from the bank is too small to be distinctive, but is closely similar to a sherd from Scarborough.*

Nos. 25 and 26, fine, thin vessels from the fort, are typical of the best broch ware. Fringed lines as in No. 25 occur at Dun an Iardhard, Skye,³ and close zigzags occur at the earthhouse of Foshigarry, combined as in No. 26 with a decorated cordon.⁴ The shape of No. 26 is abnormal in that there is no eversion of the rim, but some of the fine vessels, decorated in similar style, from forts in Coll and Tiree figured by Dr Beveridge seem to be of this shape, although no sections are given.

With the exception of No. 6, which is probably a Neolithic stray, the rim forms shown in the top line in fig. 40, *i.e.* from sites other than the fort itself, can all be paralleled at Covesea,⁵ and in the first two periods at Jarlshof. The steep and slightly hollow internal bevel of No. 8 from the chamber and of another vessel, unillustrated, from the bank is a Bronze Age form which is represented at Covesea, at Glenshee,⁶ and in the lowest level at Traprain,⁷ but not at Jarlshof. The thickened and flattened rims of Nos. 2 and 5 from the bank are typical at Covesea, Jarlshof, Glenshee, and Old Keig.⁸ In No. 2, and in two further fragments from the bank representing a similar rim, the upper surface is hollowed along its length, and the hollow is decorated with a line of pin-pricks. The hollowing is paralleled at Glenshee, but the very distinctive decoration appears, so far as I know, only at Jarlshof, where it is found in the second period associated with similarly hollowed rims decorated with finger-tip impressions.⁹

Of the rim forms from the fort itself only two call for comment. No. 14, with flattened rim, appears to belong to a shallow bowl, a type of vessel which does not appear to be found at any of the Scottish sites

¹ M. E. Cunningham, *All Cannings Cross*, plates.

² A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 228.

³ F. T. Macleod, *Proc. Soc. Ant. Scot.*, vol. lxxix, p. 69.

⁴ Erskine Beveridge and J. G. Callander, *Proc. Soc. Ant. Scot.*, vol. lxxv, pp. 344 and 345.

⁵ Miss S. Benton, *Proc. Soc. Ant. Scot.*, vol. lxxv, p. 190.

⁶ W. Thorneycroft, *Proc. Soc. Ant. Scot.*, vol. lxxvii, p. 197.

⁷ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxix, p. 157.

⁸ V. G. Childe, *Proc. Soc. Ant. Scot.*, vol. lxxvii, p. 46.

⁹ A. O. Curle, *Proc. Soc. Ant. Scot.*, vol. lxxviii, p. 288.

mentioned above, though Dr Beveridge mentions a shallow saucer, possibly from a dun. in Coll or Tiree: ¹ it can, however, be paralleled at Scarborough. It may alternatively be a neolithic stray. The vertical rims, with slight flattening on the top represented by Nos. 19-21, are suggestive of continental Hallstatt shapes,² but as they differ only in being more vertical from examples from Foshigarry they can possibly be associated with the broch culture.

Thus the pottery from the bank can be related, both as regards form and decoration, to that produced by Late Bronze and Hallstatt sites in the north and north-east of Scotland, including Jarlshof in its first and second periods, and cannot be related satisfactorily to broch types. The pottery from the fort itself, while including a number of types found in the bank, includes also undoubted examples of the broch culture. Amongst the latter are numerous specimens of crinkled bands, which, it has been suggested, represent a Hebridean development of the finger-printed band, which reached the islands, with other elements in the broch culture, from south-west England.

It may reasonably be inferred then that the bank and the fort were built by people in a Late Bronze-Hallstatt culture, comparable with that revealed in the north-east at Covesea and in the north at Jarlshof in its first and second periods. If this is so, Cletraval forms an exception to the thesis put forward by Professor Childe that the stone ring fort of the west and north, even in its simpler forms, is part of the broch culture, and was superimposed with the rest of the culture by a conquering minority from the south on a pre-broch population with Jarlshof traditions.³ Whether the broch pottery at Cletraval is to be attributed to later users of the fort itself or to those who built their cells in its ruins, we have, unfortunately, no means of determining.

The Use of the Tomb.—Direct evidence of burials in the shape of human bones was confined to section I. of the chamber, for the single bone fragment from section II. was not identifiable as human. On the evidence of pottery distribution (*vide* table on p. 496 above) the majority of the burials were in section I., but the other sections also contained a number of vessels, and two restorable pots were found in section II., two in section III., and one in section V. We have no right, of course, to assume that each vessel, or even each complete vessel, represents a burial, but the scarcity of pottery in most Scottish chamber tombs

¹ E. Beveridge, *Coll and Tiree*, p. 175.

² Cf. the Hallstatt forms from Holland, published by R. A. Smith in *Archæologia*, vol. lxxvii, pp. 179 ff.

³ V. G. Childe, *The Prehistory of Scotland*, pp. 243 and 244.

suggests that the dead were not usually offered a number of pots, while very many burials must have been without grave goods of any imperishable sort. The richness of Clettraval in this respect suggests considerable prosperity in North Uist in Neolithic times.

It is of course possible to account for the pots found in the outer sections of the chamber without assuming original burials in those sections. Thus, referring again to Dr Wace's analysis of Late Helladic practice, pottery in the *dromos* of a Mycenæan tomb might be due to the removal from the chamber of an earlier burial, either ceremoniously or without ceremony, or to funerary rites performed outside the entrance to the chamber.¹ For the former of these practices we have evidence at Clettraval in sherds of the same vessel found in different sections of the chamber,² and the two restorable pots found shattered in the north-east and south-east corners of section III. might have been thrown there from sections I. or II. The nearly complete and unscattered fragments of a vessel found on the north side of section V. could only have been ceremoniously removed thither from an inner section: alternatively they might have been deposited like the *kylikes* thrown down outside the chamber door at Mycenæ.

These doubts cannot be resolved without far more evidence than we possess of funerary practice in British chamber tombs. It is clear that at Clettraval section I. of the chamber was the main burial-place; it is very probable that burials also took place in section II., and not much less probable that they took place in section III. There is no reason to believe that section IV. was so used, and section V., if used at all, seems to have been used at most twice. It is to be noted that the use of outer sections for burial cannot be attributed to the filling up of section I., since parts of the beaker I.B. 3 from stratum B of that section were found in stratum B of section III., and indeed the total depth of funerary deposit in section I. did not exceed 2 feet.

The inference that the use of the outer sections for burial was at any rate abnormal supports the evidence derived from structural form that Clettraval is to be regarded as a chamber with either one or two antechambers and a passage rather than as a single chamber divided into five segments. If the latter is a correct description of the Clyde type of tomb – if, that is to say, each of the segments in that type was of equivalent use – Clettraval differs in the most important respect.

¹ A. J. B. Wace, *loc. cit.*, pp. 144 and 145.

² Fragments of one of the two Neolithic vessels found in Rudh' an Dunam chamber tomb, Skye, had been removed from the chamber into the antechamber (*Proc. Soc. Ant. Scot.*, vol. lxvi, p. 199), and at the Uivail tomb already mentioned fragments of vessels from the chamber were found in the passage.

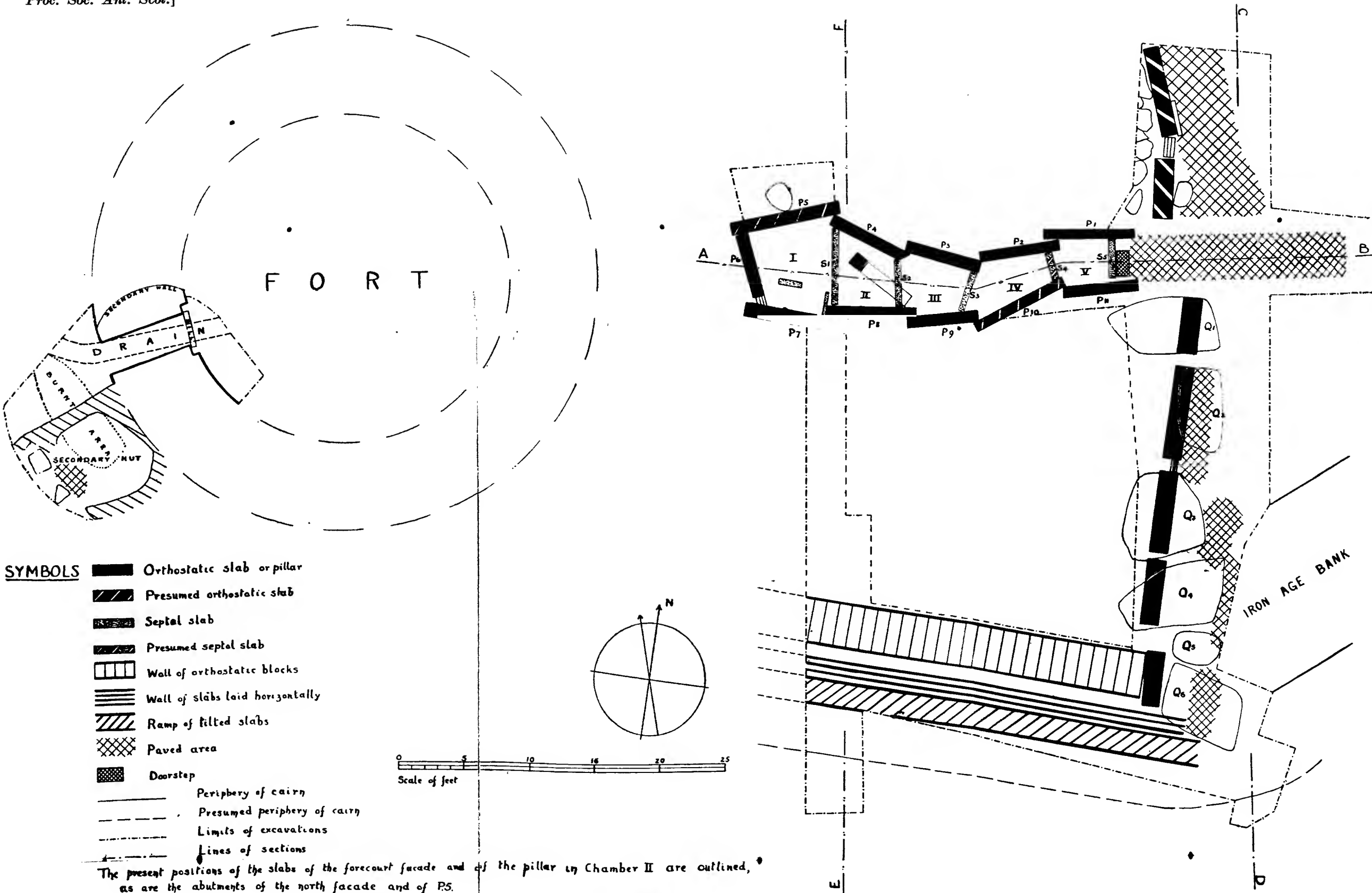
namely, in the funerary cult it represents. It is hardly certain, however, that all the segments of the tombs of Clyde type were of equivalent use.

From the quantity of pottery found, and from its stratification and development in type, it will probably be agreed that Cleittraval was used for numerous burials spread over a long period. The tombs of the Messarà in Crete continued individually in use for several centuries in the third millennium;¹ parallel evidence is available for the second millennium at Knossos.² Several centuries can similarly be allowed for the development in pottery types at Cleittraval. If a pottery sequence is to be postulated from an uncarinated and undecorated vessel like I.C. 2, through carinated and decorated vessels like I.C. 1, to beakers like I.B. 3, considerable time must be allowed, whether the types be supposed to have reached the Hebrides from England or directly from Iberia or Southern France. For both in England and in Southern France there is stratigraphical evidence of the succession of the three types in time, and, whatever time-gap be allowed for their passage to North Uist, the types cannot have started on their several journeys after they had passed out of use in the country of their immediate origin. It is reasonable to conclude that in the succession of funerary deposits at Cleittraval we have a development in pottery types similar, and occupying a similar time, to that revealed in Southern England by Windmill Hill and in the Pyrenean area by the caves of Gard, Aude, and Southern Catalonia. From which of these two areas North Uist directly drew its culture there is no sufficient evidence to show, but the balance of probability seems to incline to the latter.

I should like in conclusion to express my indebtedness to Miss M. L. Tildesley for her report on the human bones, to Dr J. Wilfrid Jackson for examining the animal bones, to the late Dr H. H. Thomas for much assistance in matters of geology, to Mr M. Y. Orr for his report on the charcoal, and finally, to Mr Stuart Piggott for his many and admirable drawings of the pottery.

¹ For example, "Tholos" No. II, at Porti was in use from E.M. I to M.M. I, a period which, on Sir Arthur Evans' chronology, would have amounted to as much as eight centuries (Xanthudides, *The Vaulted Tombs of the Messarà*, pp. 57 and 61). The length of the E.M. period, depending as it does on rather insecure parallels with Egypt, may be over-estimated, but Dr Åberg's thesis that the Messarà tombs, and the E.M. culture as a whole, are contemporary with M.M. II at Knossos is disproved by the evidence urged in its support. It is untenable that these tombs with their E.M. grave goods were those of the people using M.M. pottery and living in hamlets a few yards away from them. The same argument would prove that the Hebridean Neolithic and Iron Age cultures were contemporary because both were found side by side in the tomb and fort of Cleittraval (cf. N. Åberg, *Bronzezeitliche und Früheisenzeitliche Chronologie*, part iv, pp. 249 ff.).

Tomb XVII, in the Mayo Speho cemetery was in continuous use for six hundred years from M.M. 11b to L.M. 111b (E. J. Forsdyke, *B.S.A.*, vol. xxviii, p. 246).

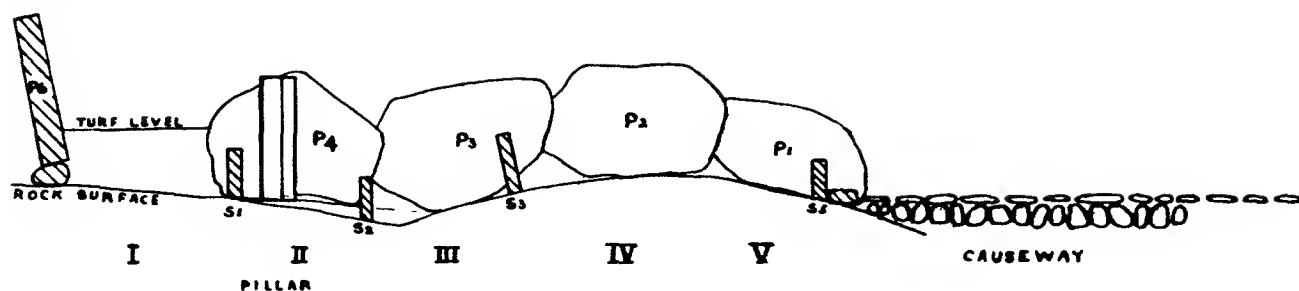


Plan of Cleittraval Chamber Tomb and Fort.

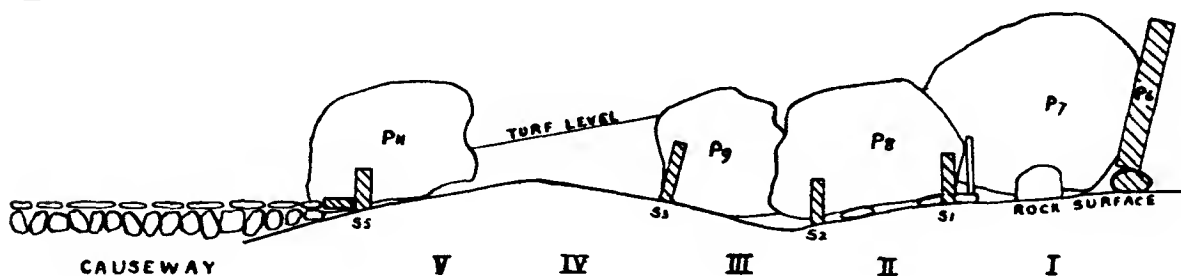
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PLATE I.

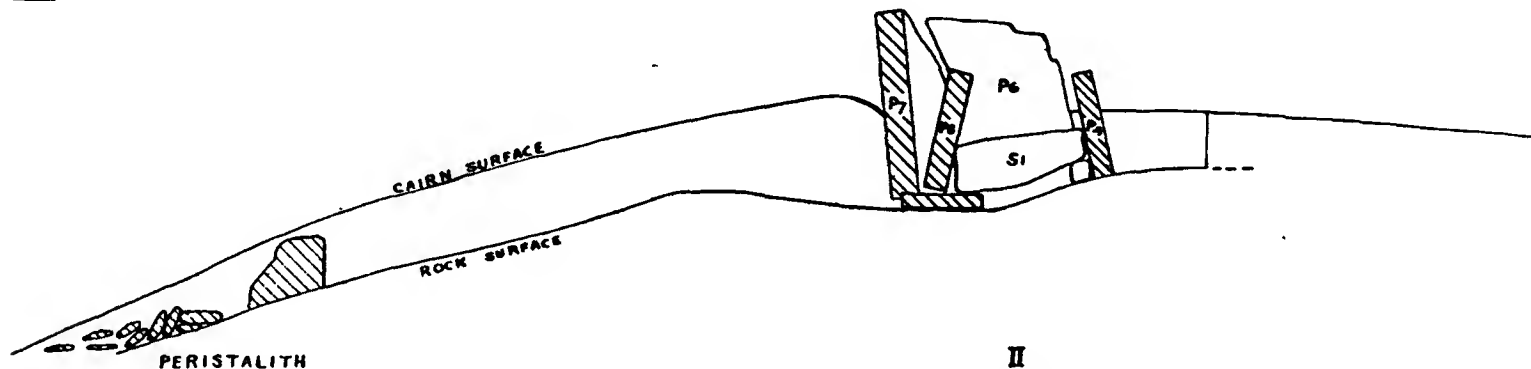
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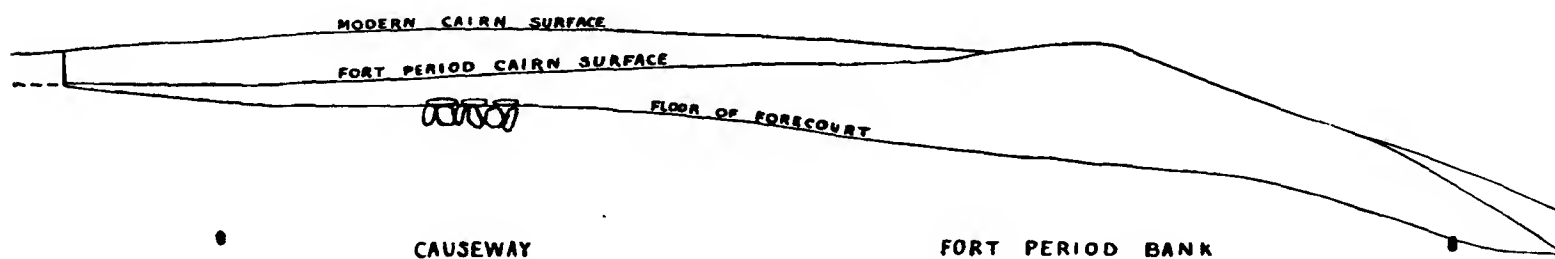
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EF

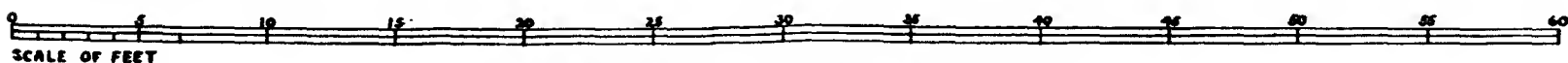
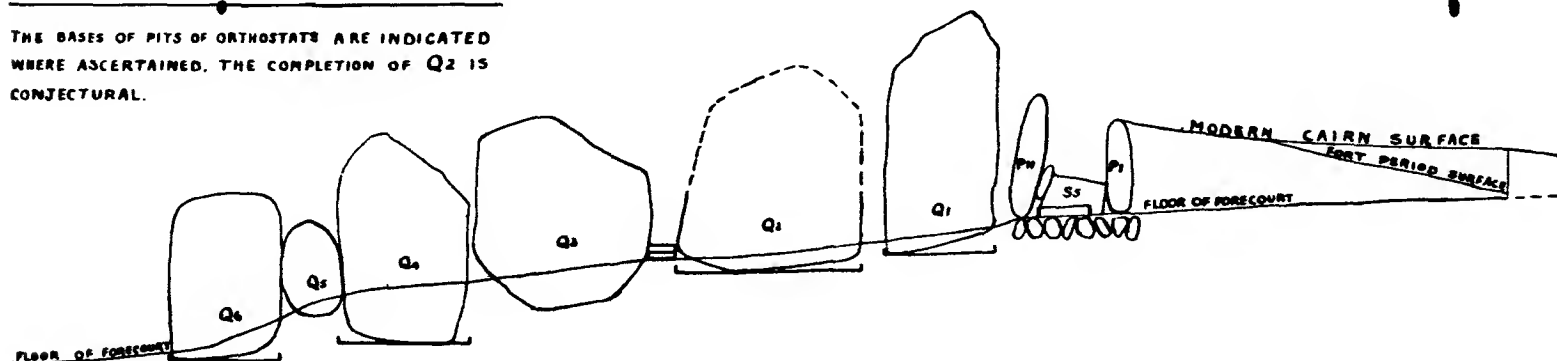


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ELEVATION OF FACADE

THE BASES OF PITS OF ORTHOSTATS ARE INDICATED WHERE ASCERTAINED. THE COMPLETION OF Q2 IS CONJECTURAL.



W. LINDSAY SCOTT.

Sections and Facade Elevation of Cleitaval Chamber Tomb.

PLATE II.

INDEX

	PAGE		PAGE
Abbotsford, Roxburghshire, Bronze Axe found at.	439	Animal Remains from Sillar Point Fort. .	158
Aberdeen, Constable of, John Kennedy of Kermucks.	45	— — — burnt from Clettraval Cairn . .	499
— — — Arms of.	46	Anniversary Meeting, 1934.	1
— — — Office of.	45	Anstruther, Sir Ralph W., Death of. . .	3
— — — Silver Spoon made in.	155	Antiquities, Berwickshire (Chalmers-Jervise Prize Essay for 1933).	157
Aberdeenshire: <i>see</i> Broomend of Crichtie; Cullerlie, Echt; Dunnideer; Foularton, Frendraught; Huntly Castle; Insch; Kermucks; Kirktown of Rothiemay; Loanhead of Daviot; Micras, Crathie; Rathen, Fraserburgh; Rhynie; Wardhouse Castle.		Antlers:—	
Abernethy, Barony of.	240	from Finavon Fort.	73, 80
— — — Helen.	244	Red Deer, Worked, from Viking Dwelling, Jarlshof.	290
— — — John, of Mayen.	244	— — — from Knowe of Yarso.	343
— — — William de, of Rothiemay.	229	from Sillar Point Fort.	158
— — — Tomb at Rothiemay.	244	Applecross, Ross-shire, Bronze Brooch from.	21
Address, Silver Jubilee, to The King. .	434	Ard Beg, Islay, Dun at.	82
Adze, Flint, from Knappers, Kilbowie. .	353	Ardmore, Islay, Dun on.	82
Airhouse, Berwickshire, Objects from, presented.	247	Ardovie, Brechin, Angus, Iron Spud from, (donation)	247
Albany, Louise de Stolberg, Countess of, Autograph Letter of, presented. .	323	Argyll: <i>see</i> Clachanach; Iona; Islay; Kilmory Knap.	
Altnamain, Edderton, Ross-shire, Cup, Steatite, from.	438	Arm-chair, Orkney, (donation).	14
Amber Bead from Rhynie.	454	Armitage, Captain Harry A., Death of. .	3
Analysis of three Bronze Axes.	424	— — — — — Relics bequeathed by. .	118
Anderson, Rev. John, elected.	2	Arndet, Gold, Penannular, from Berwickshire, (donation)	20
An Dun, Kildalton House, Islay.	82	— — — Jet, from Airhouse, (donation). .	247
— — — Octafad, Islay.	84	— — — „ Glenluce Sands, (purchase) .	22
— — — Rhinns Point, Islay, Fort.	84	— — — „ Viking Dwelling, Jarlshof. .	295
Angus County Council present Sculptured Stone from Bullion.	15	Arms:—	
Angus: <i>see</i> Ardovie, Brechin; Brechin; Bullion, Invergowrie; Dundee; Finavon; Montrose; Soutra, Tannadice.		Highland Pistol, (donation)	118
Animal Remains from Finavon Fort. . .	52, 73, 79	Old Scottish Gun, (purchase)	439
— — — from Knowe of Yarso.	334	of the Constable of Aberdeen Castle. .	46
— — — — — Report on.	341	of, — Ross, on China Plate.	13
		Arrow-heads:—	
		Flint:—	
		from Airhouse, (donation)	247
		„ Bragar, Lewis, (donation)	15
		„ Catlness.	116
		„ the Dryfe Valley, Dumfriesshire, (donation)	438
		„ Freswick Links, (donation)	246
		„ Knowe of Yarso.	335

	PAGE		PAGE
Arrow-heads (<i>contd.</i>):—		Banffshire: <i>see</i> Balvenie Castle; Clashman-	
Flint (<i>contd.</i>):—		hillock; Inchcorsie; Redhill, North;	
from Newhouse, Rousay, (donation)	437	Rothiemay; Tillytarmont.	
.. Rossie Ochil, Forgandenny.		Banks, Mrs J. M., presents a Plate with	
(donation).	14	Ross Coat-of-Arms.	13
.. Skitten Fort.	112	Barclay, David de, Lands of Rothiemay	
.. Soutra Farm, Tannadice.		granted to.	229
(donation).	14	Barley Measure, from Mains of Libberton.	
Quartz, from Shegarten, Luss, (donation)	12	(donation)	11
Assembly of the Free Church, Medal com-		Barnes, Miss Juba M., presents a Medal. .	248
memorating, 1843.	322	Barony of Abernethy.	240
Atholl, David de Strathbogie, Earl of. .	229	— of Rothiemay.	228
— Earls of, Arms of, on Balvenie Castle.	396	Barr, Miss A. C., presents an Orkney Chair.	14
Aurignacian Flint Implements, (donation).	248	Bathgate, T. D., presents Deer-horn Imple-	
Awl-like Objects, Bone, from Viking Dwell-		ments.	14
ing, Jarlshof.	288, 297	Batie, Archie, imprisoned at Rothiemay. .	231
Axes:—		Batons, of Perth High Constables, (pur-	
Analysis of three Bronze.	424	chase)	323
Bronze, flat, (purchase)	440	— Special Constables', (donation) .	118
— flanged, (purchase)	440	Beads:—	
— socketed, (purchase)	440	Amber, from Rhynie.	454
— found at Abbotsford, (pur-		Bone (Bird), found near Viking dwelling,	
chase)	439	Jarlshof.	297
Flint, from Wick Harbour.	115	Faience, Melon-shaped, from Newstead.	
Jade. .. New Zealand, (donation) .	118	(donation)	15
Stone. .. Bragar, Lewis, (donation) .	15	Glass, (donation)	118
— .. Earlston Mains, (purchase).	22	— from Glenluce Sands, (purchase)	22
— .. Mosshouses, Earlston, (pur-		— .. Rhynie.	454
chase)	22	— .. Siccar Point Fort.	158
— used as hammer-stone, from Fres-		— .. Viking dwelling, Jarlshof. .	296
wick Links, (donation)	246	— Vitreous paste segmented, from	
Ayr, Spoon made in,	146	Knappers, Kilbowie.	362
Ayrshire: <i>see</i> Beith; Dalry; Doon Castle;		Jet, Shale, or Lignite, from Burial at	
Irvine; Shewalton Moor, Irvine;		Knappers, Kilbowie.	359 f.
Straiton.		— — — from Glenluce Sands,	
Bachda Mor, Vallay, N. Uist, Bone Pins from.	21	(purchase)	22
Badge, Brass, of Plasterers' Society, (don-		Shell, from Vallay, N. Uist, (purchase) .	21
ation)	15	Stone, found near and in Viking dwell-	
Baird, George, of Auchmedden.	232	ing, Jarlshof.	296
Balliol Family, connection with Dunnideer		Beakers: <i>see</i> Urns.	
of.	466	Bed-smoother, Carved, from Orkney, (dona-	
Balls, Stone, from Hillhead Fort, Kirkwall,		tion)	14
(donation).	399	Beggars' Badges, (purchase)	22
— from Knappers, Kilbowie.	370	Benn Bheigeir, Islay, Duns east of.	81
— — — Carved, (donation)	118	Beith, Ayrshire, Communion Cups of. . .	9
— — — use of.	531	Berwickshire Antiquities (Chadmers-Jervise	
— Culverin, Stone, from Cessford Castle,		Prize Essay for 1933).	157
(donation)	19	— Gold Armlet, Penannular, from. . . .	20
Baltasound, Shetland, Bismar from. . .	22	— <i>see</i> Airhouse; Blackburn Mill, Cock-	
— Harbour.	35	burnspath; Brander Hough; Camp	
Balvenie Castle, Banffshire, Heraldic		Field, Greenfield Farm, Foulden;	
Decoration on.	395	Chester Hill, Aytou; Corn Fort,	
		Eyemonth; Dryburgh Mains; Earl-	

PAGE		PAGE
	ston Mains; Eain's Heugh; Eye- mouth; Greenlaw Rock; Haly Jo. Lumsdaine, Coldingham; Hare- heugh Craigs; Homestead, Pilmuir. Lauder; Lamberton Moor; Lam- berton Shiels; Pettico Wick; Siccar Point, Cockburnspath; Wheelburn Law, Lauder.	
Birkwood, Banchory, Kincardineshire. Micro-burins found at,	444	
Birrenswark, Dumfriesshire, Latten Spoon from,	441	
Bismar, Wooden, from Baltasound, Shet- land, (purchase)	22	
Black, John C., Death of,	3	
Blackburn Mill, Cockburnspath, Berwick- shire, Urns found near,	11	
Black Dyke, Lamberton Moor, Berwick- shire,	166	
— Houses,	287	
Boat, Clinker-built, The,	287	
Bodkins, Bone, from Viking dwelling, Jarl- shof,	293	
Bog, David, Goldsmith,	144	
Bolt-head, Iron, from Viking dwelling, Jarlshof,	295	
Bone:—		
Burnt, from Cleittraval Cairn,	499, 530	
Calcined, in Loanhead of Daviot Stone Circle,	172, 175, 177, 183	
— in Cist at do.,	185	
Implements of, from Broch of Cogle, Watten, (donation)	15	
— from Finavon Fort,	73	
— .. Jarlshof,	98	
— .. Viking dwelling, Jarlshof,	288, 290, 297	
— .. Yarrow, Chambered Cairn,	337 f.	
Objects of: <i>see</i> Awl-like Objects; Bod- kins; Borers; Chisel; Combs; Dress- fastener; Egg-spoon; Ferule; Mus- tard-spoon; Needles; Pins; Playing- piece; Pommel; Snecks; Spoon; Ter- minal; Toggles; Tube; Turn- buckles.		
Cetacean, Object of: <i>see</i> Whorl.		
Books, Donations and Purchases of, 22, 26, 119, 121, 249, 323, 324, 399, 441, 442		
Borannibill Mor, Port Ellen, Islay, Dun on,	82	
Borers:—		
Bone, from Jarlshof,	98	
— — Vally, N. Uist, (purchase)	21	
Borichull Mor, Islay, Dun on,	83	
Bowl, Samian, Fragment of, from France, (donation)	20	
— Steatite, from Viking dwelling, Jarl- shof,	293-5	
Braco, William Duff, Lord,	230	
Bragar, Lewis, Ross-shire, Flint Arrow- head and Stone Axe from,	15	
Brander Heugh, Berwickshire, Fort on,	165	
Brash, Professor J. C., Reports on the Human Remains from Knappers, Kilbowie,	377	
Brass, Objects of: <i>see</i> Badge; Brooch.		
Bread-spade, Iron, (donation)	118	
Breehin, Angus, Spoon and Coins from Grave in,	147	
Bremen, Merchants from, in Shetland, in sixteenth century,	35	
Bremner, Simon, presents Objects from Freswick Links,	246	
Bridge Farm: <i>see</i> Merkleour.		
Broch of Cogle, Watten, Implements of Bone and Deer-horn from,	14	
— Dun Bhoraraic, Islay,	81, 84	
— of Jarlshof, Stone with Scribings- from,	321	
Bronze Age Cemetery at Knappers, Kil- bowie,	352	
— Axes, Analysis of three,	424	
— Implement from Glenluce Sands, (purchase)	21	
— Objects of: <i>see</i> Axes; Brooches; Buckle; Disc; Halbert; Key; Knife; Medals; Needles; Patera; Pins; Ring; Rivets; Rosette; Spear-heads; Swords; Terrets.		
— Sheet, Fragments of, from Viking dwelling, Jarlshof,	290, 295, 297	
— Slag, in Loanhead of Daviot Stone Circle,	172	
Brooch, Brass, Flat Ring, (donation)	14	
— — penannular, from Viking dwell- ing, Jarlshof,	298	
— Bronze, Flat Ring, from Applecross, (donation)	21	
— — — — from Glenluce Sands, (purchase)	119	
— — — Ring, from Glenluce Sands, (pur- chase)	21	
— Silver, made in Inverness, (donation)	14	
— — Luckenbooth, made in Inver- ness, (purchase)	119	
— — Talismanic, from Micras, Crathue, (donation)	247	

	PAGE		PAGE
Broomend of Crichtie, Aberdeenshire, Stone Circle at.	444 ff.	Camp Field Fort, Greenfield Farm, Berwickshire,	165
Brown, Sheriff C. H., elected a Vice-President,	1	Campbell, Rev. John M., elected,	9
Bruyn, Commander Claes Jansen, Tombstone of, in Shetland,	37	Candle-holder, Clay, from Perth, (donation)	249
Bryce, P. Ross, Death of,	3	Carraig Mor, Islay, Dun on,	81
— Professor T. H., presents a Mould and Whorl,	15	Carruthers, Dr G. J. R., presents a Reaper's Hand-protector,	14
Bryden, Harry B., presents a Bank Safe Key, Medal, and Trade Circular,	248	Cassillis, Countess of, presents Piece of Tartan,	11
Buckle, Bronze, from Glenluce Sands, (purchase),	22	Castle, Rothiemay,	235
Bullion, Invergowie, Angus, Sculptured Stone from,	15 f.	Castles of Dunniddeer and Wardhouse, Aberdeenshire,	460
Burial, Incinerated, at Knappers, Kilbowie,	361	Castor-oil Spoon, Pewter, from Dundee, (donation),	12
Burials: <i>see</i> Cairns; Cemetery; Cists.		Cawdor, Nairn, Beakers from, exhibited,	397
Burin or Graver, Flint, from Knowe of Yarso,	337	Cemetery, Bronze Age, at Knappers, Kilbowie,	352
Burnisher or Whetstone, from Clachanach, Iona, (donation),	20	Cessford Castle, Roxburghshire, Culverin Balls from,	19
Burn-Murdoch, W. G., presents relics from Earn's Heugh Fort,	15	Chalcedony, Scraper, from Shewalton, Irvine,	12
Button, Copper-gilt, of Edinburgh and Northern Railway, (donation),	21	Chaplin, Mrs Wyndham, elected,	397
Buxton, Dr R. J., on an Earth-house at Portnacoon, Sutherland,	431	Charcoal from Clettraval Cairn,	521
		— at Finavon Fort,	55
		Charmstone, Stewart of Ardsheal, (donation),	323
		Chatfield, A. W. F., presents a Food-vessel,	13
Cadell, Henry M., Death of,	3	Chert, Graver, Tardenoisian, from Dryburgh Mains,	12
— — — — — Obituary Notice of,	5	— Scrapers and Point, from Airhouse,	247
Cairnmuir, Peeblesshire, Gold Terminal from,	455	Chester Hill, Ayton, Berwickshire, Cultivation Terraces on,	166
Cairns:—		Childe, Professor V. Gordon, on Excavation of Finavon Fort,	49
Chambered, Clettraval, North Uist,	480	— — — — — Notes on some Duns in Islay, by,	81
Long, stalled, The Knowe of Yarso, Rousay, Orkney,	325	Chisel-like Tool, Bone, from Jarlshof,	98
— — — — — Objects from, presented,	11	Church of Rothiemay,	243
near Rothiemay,	225	— of Scotland, Free Presbyterian, Medal commemorating First Assembly of, (donation),	322
Small, on Wheelburn Law, Lauder,	167	Cist at Knappers, Kilbowie,	363
— Ring, in Stone Circle, Cullerlie, Echt,	218	— — — — — Cremation at Ury, Stonehaven,	384
Caithness, Notes on Flint Implements from, 111 ff.		— — — — — Short, and Urn, in Cairn in Stone Circle, Loanhead of Daviot,	185
— — — — — Stone Hammer, probably from,	13	— — — — — found near Monkcleur, Perthshire, Note on,	401
— — — — — "Wags" in,	287	— — — — — Flint Saw and Urn from,	403
— — — — — <i>see</i> Cogle, Broch of, Watten; Dunnet Head; Freswick; Kinloch; Langwell House; Midtown, Freswick; Skitten; Wick; Stroma; Wick.		— — — — — with Ring-marks on Lid, at Knappers, Kilbowie,	353
Calendar, from Holyrood Abbey, thirteenth century,	471	— — — — — with two Beakers from Cawdor,	397
Callander, J. Graham, and Walter G. Grant, on a Long, Stalled Cairn, The Knowe of Yarso, in Rousay, Orkney,	325	— — — — — List of similar cases,	398
		Clachanach, Iona, Argyll, Whetstone or Burnisher from,	20

INDEX.

541

	PAGE		PAGE
Clark, Alexander, Covenanter, of Berry-knowes, Sword of,	398	Craufuird, George, Goldsmith,	154
Clashmanhillock, Banffshire, Site of Flint Industry at,	255	Cremation, Cist, at Ury, Stonehaven,	384
Clay, burnt, with impressions, remains of lining, at Jarlshof,	285	Crosraguel Penny, (donation)	119
— Objects of, from Knappers, Kilbowie,	371	Cross, Calvary, sculptured, on Traprain Law,	125
— — see Candle-holder; Loom-weight; Moulds,		Crucibles from Finavon Fort,	72
Cleghorne, George, Silversmith,	141	— from Viking dwelling, Jarlshof,	299
Cletraval, North Uist, Chambered Cairn, excavation of,	480	Cruisic, Lid of, from Viking dwelling, Jarlshof,	299
— — Fort, excavation of,	482	Culbin Sands, Morayshire, Micro-burins found at,	444
Clinker-built Boat, first construction of,	287	Culbinstburgh, Bressay, Shetland, Tombstone of Commander Claes Jansen Bruyn at,	37
Cloth of Gold from Coffin of Robert the Bruce, (donation)	14	Cullerlie, Echt, Aberdeenshire, The Standing Stones of,	215
Clubs, Stone, from Jarlshof,	96, 265	Culrain, Hill of, Ross-shire, early Scottish Spoons from,	141
Cocks, William A., elected,	435	Cultivation Terraces, Chester Hill, Ayton,	166
Cogle, Broch of, Watten, Caithness, Implements from,	15	Culverin Balls, Stone, from Cessford Castle,	19
Coins:—		Cunningham, George, Edinburgh Goldsmith,	141
Crosraguel Penny, (donation)	119	— John Richard, elected,	2
David II., Noble, Cast of, (donation)	247	Cup-marks in Stone Circles,	194
James III., from Glenluce Sands, (purchase)	22	— — at Loanhead of Daviot,	189 f., 194
Portuguese Gold, (donation)	119	Cup- and Ring-marks on Traprain Law,	125, 129 ff., 133
Roman, from Partick, (donation)	9	— — — see Ring-marks,	
Scottish, found with Silver Spoon in Brechin,	147	Cups:—	
Coloadale, Unst, Shetland, Snuff Quern from,	20	Communion, of Dalry, Ayrshire,	9
Colquhoun, Matthew, Goldsmith, Ayr,	146	Steatite, from Altnanum, Edderton, (purchase)	438
Combs, Bone, from Vallay, (purchase)	21	Stone, found in Loanhead of Daviot Stone Circle,	170
— — Viking, from Jarlshof dwelling,	265, 290, 298 f., 318	Curle, Alexander O., Account of the Excavation, on behalf of H.M. Office of Works, of another Prehistoric Dwelling (No. V) at Jarlshof, Sumburgh, Shetland, in the summer of 1934,	85
— — Wooden, from North Berwick, (donation)	21	— — on the Excavation of a Dwelling of the Viking Period at Jarlshof, Sumburgh, Shetland,	265
— — from Vallay, N. Uist, (purchase)	21	— Dr James, presents Autograph Letters of Henry, Cardinal York, and the Countess of Albany,	323
Cooking in Viking houses, Methods of, 278, 284 ff.		Curling Stone, (donation)	119
Cooking-pot from Jarlshof,	101-2	Dalry, Ayrshire, Communion Cups of,	9
Copper, Objects of: see Halbert; Ladle,		David II., Cast of Noble of, (donation)	247
Corn Fort, Eyemouth, Berwickshire,	158	Davidson, J. M., on a Bronze Age Cemetery at Knappers, Kilbowie, Dumbartonshire,	352
Corrour, George, of Inchdrewer, at Dunni-deer,	468	Deer-horn, from Finavon Fort,	73, 80
Costerton Mains, Midlothian, Food-vessel from,	13		
Covenanter's Sword, Alex. Clark of Berry-knowes, (donation)	398		
Covenanters' Flag, (donation)	398		
Cowen, John D., on the Curnmuir Gold Terminal: a Parallel, and a possible explanation of its use,	455		
Craig, Dr John, elected,	322		

	PAGE		PAGE
Deer-horn, Implements of, from Broch of Cogle, (donation)	14 f.	Dumbartonshire: <i>see</i> Knappers, Kilbowie; Luss; Shegarten, Luss.	
— Objects of: <i>see</i> Handle.		Dumfriesshire: <i>see</i> Birrenswark; Dryfe Valley.	
— Tine, pointed, from Vallay, N. Uist. (purchase)	21	Dundee, Silver Spoon made in.	138, 143
De Pinto, Raimondo N., presents a Purse, Medal, and Badge.	15	Dunfermline Abbey, Cloth of Gold from Bruce's Tomb,	14
De Pree, Mrs. presents a Penannular Gold Armlet.	20	Dunnet Head, Flint Arrow-head found near.	116
Detken, Segebade, of Bremen, in Shetland.	29, 35	Dunnett, John, presents a Stone Hammer.	13
Dickson, Douglas S., elected,	2	Dunnideer, Aberdeenshire, Earthworks at.	463
Disc, Bronze, from Glenluce Sands. (purchase)	21	— Golden-toothed Sheep of,	470
— Slate, from Glenluce Sands. (purchase)	22	— Lands of,	466 ff.
— Stone, from Finavon Fort.	75	— Vitrified Fort at,	462, 465
— — from Viking dwelling, Jarlshof.	293, 299	Dunnideer Castle, Aberdeenshire,	460
Dises, Stone, use of,	531	Duns:—	
Document:—		— An Dun, Kildalton House, Islay,	82
Commission by the Old Chevalier to Charles Stewart of Ardsheal. (donation)	323	Octafad, Islay,	84
Dog, Bones of, from Knowe of Yarso,	341 ff.	at Ard Beg, Islay,	82
Donald, James S., Death of,	3	„ Ardmore, Islay,	82
Doon Castle, Loch Doon, Ayrshire, Loom-weight from,	9	„ Boranniebill Mor, Port Ellen, Islay,	82
Doorway, Heraldic, of Huntly Castle,	388	on Borichill Mor, Islay,	83
Dot and Circle Ornament on Bronze Pin, from Viking dwelling, Jarlshof,	305	„ Carraig Mor, Islay,	81
Douglas, David, presents a Melon-shaped Bead,	15	in Islay, Notes on,	81
Doune, Perthshire, Carved Bone Spoons from,	248	near Loch Gearach, Islay,	83
Dovecot, Rothiemay,	241	between Loch Indall and Machair Bay, Islay,	83
Dow, Professor D. Ruthierford, the Skeletal Remains in a Short Cist found at Bridge Farm, near Meikleour, Perthshire,	404	at Mull of Oa, Islay,	82
Drain in Viking House, Jarlshof,	283	„ Mulloch Ban, Islay,	82
Dress-fastener, Bone, from Viking dwelling, Jarlshof,	317	„ Rudha Bluidhe, Islay,	81
Drostan, Saint,	226	„ Trudernish Point, Islay,	82
Drumbuie, Glen Urquhart, Inverness-shire, Symbol Stones from,	435, 437	Dun an Nighean, Islay,	84
Dryburgh Mains, Berwickshire, Micro-burin from,	444	— Bhar-a-chlaom, Islay,	83
— — — Tardenisian Graver from,	12	— Bheinicheltun, Islay,	83
Dryfe Valley, near Lockerbie, Flint Arrow-head from,	438	— Bhoraraic, Islay, Broch of,	81, 84
Duddingston Loch: <i>see</i> Edinburgh.		— Bhoraraig, Rudha na Faoilleige, Islay,	84
Duff-Dunbar, Mrs L., on a Fort at Skitten, Wick, with Notes on Flint Implements from Caithness,	108	— Cheapasaidh Mor, Ballygrant, Islay,	83
		— Chroisprig, Islay,	84
		— Flinn, Islay,	82
		— Ghuaidre, Kilmeny, Islay,	83
		— Glas an Loin Ghuirm, Islay,	83
		— Mideir, Islay,	83
		— Nosebridge, Mulindry, Islay,	83
		Durham, Isobel, initial of, on Mazer and on Spoon,	143
		Dyke, Black, with Pitted Trench, Lamber-ton Moor,	166
		— Medneval, in Stone Circle, Loanhead of Daviot,	192 f.
		Earlston: <i>see</i> Mosshouses.	
		— Mains, Berwickshire, Stone Axe from,	22
		Earn's Heugh, Berwickshire, Relics from Fort, (donation)	15

	PAGE		PAGE
Earth-house at Portnacon, Sutherland. . .	431	Fishing Reel, Iron, (donation) . . .	118
East Lothian: <i>see</i> Haddington; North Berwick; Traprain Law; Windy Mains.		Flag, Covenanters', carried at Bothwell Brig, (donation) . . .	398
Edinburgh:—		Flagon, Glass, from Leith, (purchase) . .	119
Bed-smoother, Carved, from. . .	14	Fleming, Bartholomew the. . .	466 f.
Canongate Spoon, in the Museum. . .	138, 141	— of Wardhouse, Family of. . .	466 f.
Duddingston Loch, Bronze Swords and Spear-head found in. . .	439 f.	Flemings, Colony of, in the Garioch, Aberdeenshire, in thirteenth century. . .	467
Early Silver Spoons made in. . .	144, 154	Flint:—	
Holyrood Abbey, thirteenth century Calendar from. . .	471	Burnt, in Loanhead of Daviot Stone Circle. . .	172
and Northern Railway, Button of. . .	21	Cor., from Finavon Fort. . .	73
Edwards, Arthur J. H., on Rock Sculpturings on Traprain Law. . .	122	— from Viking dwelling, Jarlshof. . .	299
— — — on a Cinerary Urn at Horsburgh Castle Farm, Innerleithen. . .	262	Flake, in Finavon Fort. . .	64, 72
Elfigy at Kilmory Knapp. . .	19	Flakes, notched, Micro-burins derived from. . .	444
Egg-spoon, Bone, Carved, from Doune, (donation) . . .	248	Implements, from Airhouse, (donation) — from Caithness, Notes on. . .	247 111 ff.
Eildon Hills, Roxburghshire, Bronze Spear-head found near. . .	439	— „ Finavon Fort. . .	72
Elphinstoune, Robert, Silversmith. . .	144	— „ Freswick Links, (donation) . .	246
Epitaphs, Latin, at Reafirth, Shetland. . .	40, 44, 47 f.	— Aurignacian, (donation) . .	248
— Low German, on Shetland Tombstones. . .	27 ff.	— Battered back, etc., from Freswick, (purchase) . . .	438
Erskine Family at Dunnideer. . .	467 f.	— Worked, from Knowe of Yarso, 335, 337 — — — from Cist Cremation at Ury, Stonehaven. . .	386
Eyemonth Fort, a sixteenth-century Ruin. .	158	Industry, Sites of, at Incheorsie and Clashmanhillock, Rothiemay. . .	255
Fabricator, Flint, from Airhouse, (donation)	247	Knives of Orkney, the Small. . .	251
Fairs at Kirktown of Rothiemay. . .	245	Tools, etc., from Limeuil, France, (donation) . . .	438
Farquhar of Monny, at Dunnideer. . .	468	— with battered backs, from near Midhowe Broch, (donation) . .	438
Farquharson of Invercauld, at Wardhouse. .	469	Worked, from Cullerlie Stone Circle, Echt. . .	217
Fenton, William, elected. . .	246	— from Hullion, Rousay, (donation) . .	437
Fergusson, Bernard, elected. . .	246	— „ Knappers, Kilbowie. . .	361, 371
— David, initials of, on Mazer and Spoon. .	143	— „ Midtown, Freswick, (purchase) . . .	438
— Isobel Durham or. . .	143	— and unworked, from Skitten Fort, 110 ff.	
— Mr. presents a Loom-weight. . .	9	<i>See</i> Adze; Arrow-heads; Axe; Fabricator; Graver or Burin; Knives; Point; Saws; Scrapers.	
Ferule, Bone, from Viking dwelling, Jarlshof. . .	290	and Chert, Flakes, worked, from Newhouse, Hullion, Rousay, (purchase) . .	323
Fife, William Duff, Lord Braco, Earl of. .	230	— Implements of, from Newhouse, Rousay, (donation). . .	323
— <i>see</i> Dunfermline; Tulliallan.		Workers' Site, Freswick Links, Objects from, presented. . .	246
Finavon, Angus, excavation of Vitrified Fort. . .	49	Font in Old Church of Rothiemay. . .	244
Relics from. . .	70	Forbes, Dr Donald J., elected. . .	435
do., presented. . .	249	— Lt.-Col. Ian Rose Innes Joseph Foster, of Rothiemay. . .	230
Fire-box: <i>see</i> Oven.			
Fire-places, Heraldic, of Huntly Castle. .	393-5		
Fish-hook, Iron, from Viking dwelling, Jarlshof. . .	301		
Fishing Industry in Shetland in 16th century. . .	31 ff.		

	PAGE		PAGE
Forbes, Lt.-Col. John Foster,	230	Freswick Links, Caithness, Stone, Flint, and	
— John, 8th Lord,	240	Bone Implements and Pottery from,	246 f.
— Lord, presents Pottery, etc., from		Prottoft, Rousay, Orkney, Flint Point from,	438
Old Keig Stone Circle,	119		
— Sir John, of Watertown,	46	Gairdine, Robert, Goldsmith, Dundee,	143, 144
— Thomas, of Watertown,	46	Galloway, A., Goldsmith, Aberdeen,	155
Forestry Commissioners present an Urn,	119	Gardner, W. Scott, presents a Wooden	
Forsyth, L. H., presents Communion		Hair Comb,	21
Tokens,	15	Gardyne, Colonel A. D. Greenhill, presents	
Forbs:—		objects from Finavon Fort,	249
An Dun, Rhinns Point, Islay,	84	Garioch, Earldom of,	467 f.
East of Beinn Bheigeir, Islay,	81	Gearach, Loch, Islay, Duns near,	83
Brander Heugh,	165	Gentles, John, elected,	322
Camp Field, Greenfield Farm, Foulden,		George V., King, Silver Jubilee Address to,	434
Berwickshire,	165	Gibson, William, Death of,	3
Corn Fort, Eyemouth,	158	Gillies, William, Death of,	3
Dun an Nighean, Islay,	84	Gilmour, Sir Robert, elected to Council,	2
Dun, Mull of Oa, Islay,	82	Glanderston (Gillandreston), Place-name,	466
Eyemouth, sixteenth-century Ruin,	158	Glass, Objects of: <i>see</i> Beads; Flagon,	
Greenlaw Rock, Berwickshire,	165	Glenboig, Lanarkshire, Bronze Knife in	
Haly Jo, Lumsdaine, Coldingham,	163	Ox-hide, Sheath from,	357
Hareheugh Craigs, Stenmuir,	161	Glenluce Sands, Wigtownshire, Relics from,	
Homestead, Pilmuir, Lauder,	165	(purchased)	21, 22, 119
Lamberton Shields, Mordington,	160	Gold, Cloth of, from Coffin of Robert the	
Pettico Wick,	163	Bruce, (donation)	14
Rudh an Duin, Port Charlotte, Islay,		Objects of: <i>see</i> Armlet; Ring, Finger;	
Site of,	84	Terminal,	
Siecar Point, Cockburnspath,	157, 158	Golf Clubs, (donation)	119
Skitten, Wick,	108	Gordon of Beldorney, at Wardhouse,	469
Stone, at Clottraval, N. Cist,	482	— George, of Gicht,	232
Vitrified, at Dunnideer,	462, 465	— John, of Cairnburrow,	230
— Dun Nosebridge, Mulindry, Islay,	83	— J. Tennant, Death of,	3
— Finavon, Angus, Excavation of,	49	— — — — — Obituary Notice of,	5
— Trudernish Point, Islay,	82	— — — — — Kethokismyline, at Dunnideer,	468
<i>See also</i> Brochs, Duns,		— William, of Rothiemay,	230, 232
Fortune, John R., presents objects from		Graffiti on Tablet from Broch of Jarlshof,	321
Airhouse,	247	— — — — — Tablets from Viking dwelling, Jarlshof,	308
Foularton, Kintore, Aberdeenshire, Stone		Graham, Charles,	244
Circle at,	445	Grain in Food-vessels from Knappers, Kil-	
France, Bronze Terrets from,	457	bowie, and Mount Vernon,	358
— Implements, Flint, etc., from, (donation)		Grant, Walter G., presents objects found at	
.	438	Knowe of Yarso, at Midhowe Cairn,	
— Moulds for Samian Ware, fragments of,		and at Quendale,	11
from,	20	— — — — — a Stone Ball,	399
Frazer, John, Deacon's Mark of, on		— — — — — Flint and Stone Implements	
Spoons,	141	from Rousay,	437 8
Frendraught, Lady,	232	— — — — — and Dr J. Graham Callander, on	
— Aberdeenshire, Burning of,	232	a Long, Stalled Cairn, The Knowe of	
Freswick, Caithness, Implements, Flint,		Yarso, in Rousay, Orkney,	325
from,	438	Graver or Burin, Flint, from Knowe of	
— — — — — Links, Caithness, Objects from Flint-		Yarso,	335, 337
workers' Site on,	246	— — — — — Tardenoisian, from Dryburgh Mains,	
— — — — — Steatite Urn and Whorl from,	247	(donation)	12

INDEX.

545

	PAGE		PAGE
Greenlaw Rock, Berwickshire, Fort,	165	Hullion, Rousay, Orkney, Flint Implements from,	437
Greenock, Renfrewshire, Early Spoons ascribed to,	156	Human Remains from Cleittraval Cairn,	490
Gun, Old Scottish, (purchase)	439	— from the Standing Stones of Cullerlie, Echt,	222
		— from Knowe of Yaiso, Report on,	344
Hackle, Iron, Tooth of, from Viking dwelling, Jarlshof,	301	— from Loanhead of Daviot Stone Circle, Report on,	214
Haddington, Silver Spoon found in,	144	— from Cist at Meikleour, Report on,	404
Hairt, Edward, Edinburgh Goldsmith,	140	— from Ury, Stonehaven, Cist Cremation,	386
Halbert, Bronze or Copper,	440	— Unburnt, in Foularton Stone Circle,	447
Haly Jo Fort, Berwickshire,	163	Huntly, George, Earl of,	231
Hammer from Caithness, (donation)	13	Huntly Castle, Aberdeenshire, Heraldic Decoration on,	387
Hammer Stones:—		Hut at Cleittraval, N. Uist,	483
.. Freswick Links, (donation)	246	Hut-circles in Fort at Hareheugh Craigs,	162
.. Knappers, Kilbowie,	370	— Homestead, Pilmuir, Lauder,	166
.. Prehistoric dwelling at Jarlshof,	96	Incheorsie, Banffshire, Site of Flint Industry at,	225
Handle, Deer-horn, from Broch of Cogle, Watten, (donation)	15	Inches, Colonel Edward J., Death of,	3
Hannah, Ian C., elected to Council,	2	Indall, Loch, Islay, Duns near,	83, 84
Hareheugh Craigs, Berwickshire, Fort,	161	Innes, Thomas, on Heraldic Decoration on the Castles of Huntly and Balvenie,	387
Harper, Mrs. presents a Snuff Quern,	20	Insch (Inchemabani), Place-name,	466
Heath, Rev. Alban, elected,	1	Inscriptions, Low German, on Tombstones in Shetland,	27 ff.
Helman, Harold, elected,	397	Inverness, Luckenbooth Brooch, (purchase) — Ring and Brooch made in,	119
Henderson, Carl, presents a Cut Oyster Shell from North Berwick,	322	— Silver Spoon made in,	144
— Mrs Mabel D., elected,	2	Inverness-shire: see Bachda Mor, Vallay, N. Uist; Cleittraval, N. Uist; Drum-buie, Glen Urquhart; Howmore, S. Uist; Rudh' an Dunain, Skye; Rugh-ic-ille, Mhuire, Glen Urquhart; Sithean Mor, Vallay, N. Uist; Unival, N. Uist; Vallay, N. Uist,	20
Heraldry:—		Iona, Argyll, Whetstone from Clachanach,	20
Balvenie Castle,	397	Iron, Objects of: see Bolt-head; Fish-hook; Hackle, Tooth of; Padlock; Punch; Ring; Rivets; Spud,	
Cunninghame Shake-fork,	139	Irvine, Ayrshire, Scottish Spoons found at, 138, 141	
Huntly Castle,	387	Islay, Notes on some Duns in,	81
Heriot, George, Spoon with Mark of,	140	Islay: see An Dun, Kildalton House; An Dun, Octafad; An Dun, Rhinns Point; Ard Beg; Ardmure; Benn Bheigen; Boranniebill Mor, Port Ellen; Borichill Mor; Carraig Mor; Dun an Nighean; Dun Bhar-a-	
Hillhead, Kirkwall, Orkney, Stone Ball from Fort at,	399		
Holy Cross Fair (Halycroce),	245		
Holy-water Stoup at Luss,	418		
Holyrood Abbey: see Edinburgh.			
Homestead, Pilmuir, Lauder, Fort,	165		
Hones from Viking dwelling, Jarlshof,	299		
Horne, Rev. John, Death of,	3		
Horsburgh Castle Farm, Innerleithen, Peeblesshire, a Cinerary Urn at,	262		
Urn presented,	322		
Horsburgh-Porter, Sir John S., presents a Cinerary Urn,	322		
Horse-shoe, Old, from North Berwick, (donation)	118		
Houses, Black,	287		
— Viking,	272 ff.		
How, Commander G. E. P., on Early Scottish Spoons,	138		
— presents Brooches and Ring,	14		
Howmore, South Uist, Bone Toggle and Pin from,	21		

	PAGE		PAGE
chlaom; Bheinicheltun; Dun Bhor- araic; Dun Bhoraraig; Dun Cheap- asaidh Mor; Dun Chriosptig; Dun Fhinu; Dun Gluaidre; Dun Elas an Loin Ghuirm; Dun Mideir; Dun Nosebridge, Mulindry; Gearach Loch; Indall Loch; Mulloch Ban; Rudha Buidhe; Rudh' an Duin; Trudernish Point.		Kilbride-Jones, H. E., on a Stone Circle at Foularton, a Bronze Terret from Rhynie, and Distribution of the Type.	445
Jade, Object of: <i>see</i> Axe.		Kilmory Knap, Argyll, Casts of Sculp- tured Slabs from, presented. . . .	16
James II. and VII., Medal of, (donation). .	248	Kincardineshire; <i>see</i> Birkwood, Banchory; Ury, Stonehaven.	
James III., Coins of, from Glenluce Sands. .	22	King George V., Jubilee Address to, . . .	434
Jamieson, Charles, Inverness, Lucken- booth Brooch made by.	119	Kinghorn, Robert, on Unrecorded Berwick- shire Antiquities (Chalmers-Jervise Prize Essay for 1933).	157
Jarlshof, Sumburgh, Shetland, Excavation of Prehistoric Dwelling (No. V.) at. . .	85	Kinlochry, Caitliness, Flint working at. .	112, 114
— Relics from.	96	Kinross-shire; <i>see</i> Loch Leven.	
— Review of results of excavation at. . .	103	Kirkhill, Penicuik, Midlothian, Beaker from.	248
— Viking dwelling at.	265	Kirkness, William, presents a Bed-smoother. .	14
— Relics from.	288	Kirktown of Rothiemay, Aberdeenshire, . .	245
— Brooch of Stone with Scribings found in. .	321	Kirkwood, Gilbert, Silversmith, Edinburgh. .	9
Jet, Shale, or Lignite:—		Kitchen-midden, Bragar, Lewis, Arrow- head and Axe from.	15
Bead from Burial at Knappers, Kil- bowie.	359	— in Siccac Point Fort, Cockburnspath. .	158
Object from Loanhead of Daviot Stone Circle.	192	— at Viking dwelling, Jarlishof, Relics from.	288, 293
Objects of: <i>see</i> Armlets; Bead; Ring. Tool for ornamenting Pottery, from Knappers, Kilbowie.	363	Knappers, Kilbowie, Dumbartonshire, a Bronze Age Cemetery at.	352
Johnson, J. Bolam, presents a Seal. . . .	249	Knives:—	
Johnstone, Miss J. A., Covenanter's Flag and Sword bequeathed by.	398	Bronze, from Knappers, Kilbowie. . . .	355
Jonas, Alfred C., Death of.	3	— in sheath of ox-hide, found at Glenboig, Lanarkshire,	357
Jubilee Address to The King.	434	Flint, from Airhouse, (donation). . . .	217
Keig, Old, Stone Circle at, Pottery, etc. from, presented.	119	— from Knappers, Kilbowie.	371
Kennedy, Barbara; <i>see</i> Neven.		— from Knowe of Yarrow.	335, 337
— Baron John, of Kermucks.	44 ff.	— found near Skitten Fort.	112
— William, Death of.	3	— Sickle shaped, from Langwell House, Caitliness, (donation)	247
Kermucks, Baron of.	41, 46	— of Orkney, The Small Knives. . . .	251
— Lands of, Office of Constable of Aber- deen feudally annexed to.	45	Iron, from Finavon Fort.	72
Kerr, Andrew W., Death of.	3	— from Viking dwelling, Jarlishof. . .	293
Key, Bank Safe, (donation)	248	Slate, from Jarlishof.	96, 101
— Bronze, of Padlock, from Viking dwelling, Jarlishof.	304	Lacaille, A. D., on the Small Flint Knives of Orkney.	251
Kilbride-Jones, H. E., Account of the Excavation of the Stone Circle at Loanhead of Daviot, and of the Standing Stones of Cullerbie, Echt, Aberdeenshire.	168	— on Sculptured Rock, Holy-Water Stoup, and Sarcophagus at Luss. . .	416
		— on the Tardenoisian Micro-Burin in Scotland.	443
		— presents an Arrow-head and Scrapers.	12
		— — — Aurignacian Flints.	248
		— — — Implements from France. . . .	438
		Ladle, Copper, for measuring Barley, from Mains of Libberton, (donation) . . .	11

INDEX.

547

	PAGE		PAGE
Laing, Dr E. V., on Charcoal from the Standing Stones of Cullerlie.	223	Loom-weights (<i>contd.</i>):—	
——— from Stone Circle, Loanhead of Daviot,	214	Stone, from Doon Castle, (donation)	9
Lamberton Moor, Berwickshire, Black Dyke,	166	——— from Finavon Fort,	32, 75
——— Shields Fort, Mordington, Berwickshire,	160	from Viking dwelling, Jarlshof,	301
Lamont, Henry, Death of,	3	Low, Professor Alexander, on a Beaker from a Cist at Mill Farm, Rathen, near Fraserburgh, and a Cist Cremation Interment at Ury, Stonehaven,	382
Lamp, Steatite, from Viking dwelling, Jarlshof,	293	——— on the Human Remains from Knowe of Yarso,	344
Lanarkshire: <i>see</i> Glenboig; Libberton, Mains of; Partick.		——— on the Skeletal Remains from Stone Circle, Loanhead of Daviot,	214
Langwell House, Caithness, Flint Knife from,	247 f.	——— from the Standing Stones of Cullerlie,	222
Latten, Object of: <i>see</i> Spoon.		Lumsden, James, elected,	9
Lawrance, R. Murdoch, Death of,	3	Lunda Wick, Unst, Shetland, Tombstones of Bremen merchants at,	27
——— Obituary Notice of,	5	Luss, Dumbartonshire, Sculptured Rock, Holy-water Stoup, and Sarcophagus at,	416
Leach, Dr William J., elected,	2	Lyle, William, elected,	322
Lead, Objects of: <i>see</i> Medal; Whorl.		Lynchets: <i>see</i> Cultivation Terraces.	
Lees, David, Death of,	3	MacArthur, Archibald, presents a Whetstone,	20
Leith, Glass Flagon from, (purchase)	119	McBride, Daniel, elected,	118
——— South, Parish Church Tercentenary Medal,	15	MacCallum, Douglas A., on the contents of a Food-vessel from Knappers, Kilbowie,	380
Leslie of Balquhain at Wardhouse,	469	McCosh, James, exhibited Photographs of Communion Cups of Dalry,	9
——— of Wardhouse at Dunnideer,	468	Macdonald, Sir George, on More Shetland Tombstones,	27
Lessells, Jay, elected,	118	——— presents a First Brass of Titus,	9
Letter to Charles Stewart of Ardsheal from James Edgar, Secretary to the Old Chevalier, (donation)	323	MacFarlane, Captain John, elected,	322
——— from Henry, Cardinal York, (donation)	323	Macfarlane-Grieve, R. W., Death of,	3
——— from Louise de Stolberg, Countess of Albany, (donation)	323	MacGillivray, Rev. William, elected,	246
Lewis: <i>see</i> Bragar.		MacIntosh, Mrs, Death of,	3
Lezoux, France, Fragments of Mould for Samian Ware, from,	20	McIver, Rev. Dr William E., elected,	3
Libberton, Mains of, Lanarkshire, Bailey Measure from,	11	Mackay, R. F. B., elected,	3
Lignite: <i>see</i> Jet.		——— Baron William K., Death of,	4
Lindsay, Ian Gordon, presents Culverin Balls,	19	Maclea, Rev. John, elected,	9
——— John, Deacon of Goldsmiths' Craft, Edinburgh,	9	Macleod of Macleod, Sir Reginald, presents Relics from Rudh' an Dunain,	15
——— Philip, elected,	435	——— Roderick, Death of,	4
——— William, early Spoons made by,	146	Macmillan, William E. F., presents Casts of Sculptured Slabs from Kilmory Knap,	16
Line-sinker, from Viking dwelling, Jarlshof,	303	Macrae, Kenneth, elected,	3
Livingston, Patrick, of Inchcoursie,	232	——— presents a Flat-Ring Brooch,	21
Loanhead of Daviot, Aberdeenshire, Excavation of Stone Circle at,	168	Maclaggart Tartan, Piece of old,	11
Loch Gearach, Islay, Duns near,	83	Macvicar, Neil, elected,	118
Loch Indall, Islay, Duns near,	83, 84		
Loch Leven, Kinross, Barrel Padlock from,	12		
Loom-weights:—			
Clay, (donation)	118		

	PAGE		PAGE
McWalter, James M., Death of.	4	Morrison, Murdo, presents Arrow-head and	
Mantelpiece, Armorial, in Huntly Castle. .	394	Axe,	15
Masterton, J. A., presents a Candle-holder,	249	Mosshouses, Earlstoun, Berwickshire. Stone	
Maxwell, J. Harrison, elected.	322	Axe from,	22
Measure for Barley, from Mains of Libberton, (donation)	11	Moulds:—	
Medal, Bronze, commemorating the Battle of Toulouse,	322	Clay, in Loanhead of Daviot Stone Circle,	172
— — — Tercentenary, South Leith Parish Church, (donation)	15	— for Samian Ware, Fragments of, from France, (donation)	20
— — — Lead, James II. and VII., (donation) .	248	— for Swords, from Jarlshof,	96
— — — Silver, for Bank Safe Key, which had been presented to the makers, (donation)	248	Steatite, for Ingot, from Viking dwelling, Jarlshof,	293
— — — White Metal, commemorating First Assembly of the Free Presbyterian Church of Scotland, (donation)	322	— for pointed object, from Shetland, (donation)	15
Meikleour, Perthshire, a Short Cist found at Bridge Farm, near,	401	Stone, for Bars, from Finavon Fort,	75
Meldrum, Miss, presents Piece Cloth of Gold,	14	Mowbray, Miss Cecil L., elected,	2
Menteith, Murdoch Stewart, Earl of, Lands of Rothienay granted to,	229	Müller, Dr Sophus, Death of,	3
Micras, Crathie, Aberdeenshire, Talismanic Ring from,	247	— — — Obituary Notice of,	5
Micro-Burin in Scotland, the Tardenoisian, .	443	Mulloch Ban, Islay, Dun at,	82
Microoliths, Use of,	257 ff.	Munnoch, James, elected,	9
<i>See</i> Pigmy Flints.		Munro, Master A. N. G., presents a Graver, (<i>burin</i>),	12
Midhowe Broch, Rousay, Orkney, Flint Scrapers and Tools found near,	438	— — — David, presents a Barrel Padlock,	12
— — — Cairn, Rousay, Orkney, Objects from, presented,	11	Murray, William, presents a Flint Arrow-head,	14
Midlothian: <i>see</i> Costerton Mains, Black-shields; Kirkhill, Penicuik.		Mustard-spoon, Bone, from Doune, (donation)	248
Midtown, Freswick, Caithness, Worked Flints from,	438	Nachlan or Nathalan, Saint,	228
Mill Farm, Rathen: <i>see</i> Rathen.		Nairn: <i>see</i> Cawdor.	
— — — Water, Model of the upper stone of a, from Viking dwelling, Jarlshof,	318	Napier, Walter G., Death of,	4
Milne, Rev. A. A., presents a Bone Egg-spoon,	248	Nears (Nearhouse), Rousay, Orkney, Flint Scrapers from,	438
— — — Dr Francis M., presents a Castor-oil Spoon,	12	Needle-case, Bone, from Vallay, N. Uist, (purchase)	21
Mitchell, George W., elected,	118	Needles:—	
— — — Miss M. E. Crichton, exhibits Photographs of Beakers found in a Cist at Cawdor,	397	Bone, from Freswick Links, (donation) .	246
— — — Lieutenant-Commander S. S., and Miss M. E. Crichton, on the Metallurgical Analysis of Three Bronze Age Axes,	424	— from Viking dwelling, Jarlshof, .	265, 295
Montrose, early Spoons from,	146	Bronze, from Glenluce Sands, (purchase)	21
Morayshire: <i>see</i> Culbin Sands.		Neven, Barbara Kennedy or, Tombstone of,	43
		— — — Gilbert, of Windhouse and Scousburgh, .	40, 45
		— — — Gilbert and Katharine, Tombstone of, .	40
		— — — William, of Windhouse,	42 ff.
		Newhouse, Hutton, Rousay, Orkney, Flint and Chert Implements from,	353, 437
		Newstead, Roxburghshire, Melon-shaped Bead from,	15
		New Zealand, Jade Axe from, (donation) .	118
		Nicolson, John, Death of,	3
		— — — Obituary Notice of,	5
		Noble of David II., Cast of, (donation) . .	247

INDEX.

549

	PAGE		PAGE
Norse immigration into Shetland and Orkney,	287	Peace, Thomas S., Death of,	4
North Berwick, East Lothian, Cut Oyster Shells from,	248, 322	Peeblesshire: <i>see</i> Cairnmuir; Horsburgh Castle Farm.	
— Old Horse-shoe from,	118	Perth, Candle-holder from,	249
— Wooden Hair Comb from old house in,	21	— High Constables' Batons, (purchase)	323
— Law, Pottery fragment, Native, (donation)	399	Perthshire: <i>see</i> Doune; Meikleour; Rossie Ochil, Forgandenny.	
Novar, Viscount, Death of,	4	Pettico Wick Fort, Berwickshire,	163
— Obituary Notice of,	6	Pewter, Object of: <i>see</i> Castor-oil Spoon.	
Ochiltree, Lord,	230	Pigmy Flints, Scrapers, etc., from Finavon Fort,	73
Ogilvie, Archibald, of Boyne,	230	Pius:—	
— Major-General Sir Walter, elected to Council,	2	Bone:—	
Orkney, Arm-chair from,	14	from Bachda Mor, Vallay, (purchase)	21
— Norse immigration into,	287	.. Freswick Links, (donation)	247
— Small Flint Knives of,	251	.. Howmore, S. Uist, (purchase)	21
<i>See</i> Frotoft; Hillhead, Kirkwall; Hutton, Rousay; Midhowe, Rousay; Midhowe Broch, Rousay; Nears (Nearhouse), Rousay; Newhouse, Hutton, Rousay; Quendale, Westness, Rousay; Yarso, Knowe of, Rousay.		.. Knowe of Yarso (Chambered Cairn,	338
— and Shetland, sixteenth-century Trade and Fishing in,	31 ff.	.. Sithean Mor, Vallay, (purchase)	21
Oswald, Dr Felix, presents fragments of Moulds for Samian Ware and of a Bowl,	20	.. Vallay, N. Uist, (purchase)	21
Oven in Finavon Fort,	64	.. Viking dwelling, Jarlshof,	205, 293, 295, 305
— in Viking house,	277 ff.	Bronze, from Vallay, N. Uist, (purchase)	21
Oyster Shells, Cut, from North Berwick, (donation)	248, 322	— from Viking dwelling, Jarlshof,	305
Padlocks:—		Pistol, Highland Flint-lock, (donation)	118
Iron, from Viking dwelling, Jarlshof, 293, 304		Pitchstone, Worked Flake of, from Airhouse, (donation)	247
— Barrel, from Loch Leven, (donation)	12	Plasterers' Society, Badge of, (donation)	15
— and Bronze, Key of, from Viking dwelling, Jarlshof,	304	Plate, Porcelain, with Ross Coat-of-Arms, (donation)	13
Palmer, Drayton, presents a Flint Arrow-head,	138	Plates, Steatite, from Viking dwelling, Jarlshof,	317
Park, Alexander, Death of,	4	Platt, Miss Margery L., Reports on the Animal Bones from Finavon Fort,	79
— Obituary Notice of,	6	— — — — from Knowe of Yarso,	341
Partick, Lanarkshire, Coin of Titus found in,	9	Playing-men, Pebbles used as, from Viking dwelling, Jarlshof,	304
Patera, Bronze, (purchase)	440	Playing-piece, Bone, from Viking dwelling, Jarlshof,	295
Paternus, Potter's Mark on Samian Ware Mould,	20	Point, Flint, from Frotoft, Rousay, (donation)	438
Paterson, Rev. A. J. B., elected,	9	Polisher, Stone, from Skitten Fort,	111
Paton, E. Richmond, elected,	3	— — — — from Viking dwelling, Jarlshof,	306
— — — presents Casts of a Gold Noble,	247	Polishers, Bone, from Jarlshof,	98, 99
		Polson, William S., Death of,	4
		Pommel, Bone, from Jarlshof,	306
		Portland, Duke of, presents a Flint Knife,	247
		Portnacoon, Sutherland, Earth-house at,	431
		Pot-boilers from Finavon Fort,	55, 61
		— Use of,	284
		Pots:—	
		from Clettraval Cairn,	516, 527
		in Finavon Fort,	61, 71

	PAGE		PAGE
Pots (<i>contd.</i>):—		Rankine, William F., elected,	435
from Loanhead of Daviot Stone Circle.		Rathen, Aberdeenshire, Beaker from Mill	
182 f., 186 f.		Farm,	382
Steatite, from Jarlishof,	93, 102, 317	Reafirth, Mid Yell, Shetland, Tombstone	
Potter's Mark, Paternus, on Mould from		of Gilbert and Katharine Neven at,	40
Lezoux,	20	Red Deer, Antler, from Finavon Fort,	80
Pottery, Native:—		— — — — — from Knowe of Yarso Cham-	
from Cullerlie Stone Circle,	217, 220	bered Cairn,	337
„ Finavon Fort,	61, 70 ff.	— — — — — Remains of, in Knowe of Yarso	
„ Flint Worker's Site, Freswick		Chambered Cairn,	341 ff.
Links, (donation)	246	Redhill, North, Banffshire, Symbol Stone	
„ Jarlishof,	95, 101-2	from,	228
„ — — — — — Viking dwelling,	307	Renfrewshire: <i>see</i> Greenock.	
„ North Berwick Law, (donation)	399	Rhynie, Aberdeenshire, Bronze Terret from,	449
„ Old Keig Stone Circle, (donation)	119	— — — — — Beads and Samian Ware frag-	
„ Siccar Point Fort,	153	ment from,	454
„ Skitten Fort,	110	Rice, Professor D. Talbot, elected,	118
Bronze Age, from Knappers, Kilbowie,		Richardson, James S., presents a Button,	21
360, 371 ff., 377		— — — — — Cut Oyster Shells,	248
— — — — — from Knowe of Yarso,	334, 339 f.	— — — — — Pottery from North Ber-	
— — — — — „ Loanhead of Daviot		wick Law,	399
Stone Circle,	174, 179, 183 f., 186 f., 192	Ring-marks on lid of Cist at Knappers,	
— — — — — found in Stone Circles,	195	Kilbowie,	353 f.
— — — — — Beaker from Clettraval		Ring, Bronze, (purchase)	440
Cairn,	500, 529	— — — — — Iron, from Finavon Fort,	72
— — — — — fragments from Glenluce		— — — — — Jet, from Finavon Fort,	76
Sands, (purchase)	22	Ring, Finger, Gold, with Hair of Prince	
Iron Age, from Clettraval Cairn and		Charles Edward, (donation)	323
Fort,	516, 531	— — — — — Silver, made in Inverness,	
— — — — — from Foularton Stone Circle,	447 f.	(donation)	14
— — — — — „ Loanhead of Daviot		Ritchie, Professor James, on the Golden-	
Stone Circle,	170 f., 171, 176, 178 ff., 197	toothed Sheep of Dunnideer,	470
Neolithic, found near Blackburn Mill,		— — — — — John, on a Short Cist at Bridge Farm,	
Cockburnspath,	11	Meikleour, Perthshire,	401
— — — — — from Clettraval Cairn,	500, 508 f., 513, 528	Rivets, Bronze and Iron, from Viking dwell-	
— — — — — „ Glenluce Sands, (purchase)	22	ing, Jarlishof,	297 f., 301
Samian Ware:—		Robert the Bruce, King, Cloth of Gold from	
Fragment of Bowl, (donation)	20	Coffin of,	14
— — — — — from Rhynie,	454	Roberts, Sir John, Death of,	4
— — — — — Moulds for, from Lezoux, (donation)		Robertson, Rev. Charles P., elected,	397
.	20	— — — — — Robert, Death of,	4
Objects of: <i>see</i> Bead, Faience; Plate.		Rock, Sculptured, at Luss,	416
Pumice from Clettraval Cairn,	515	— — — — — Sculpturings on Traprain Law,	122
Punch, Iron, from Viking dwelling, Jarlishof,	295	Rosenbloom, Isaac, elected,	9
Purse, Bead, (donation)	15	Rosette, Bronze, from Viking dwelling,	
„ Queir of Rothiemay,” the,	243	Jarlishof,	306
Quendale, Westness, Rousay, Pieces of		Ross Coat of Arms on Plate,	13
Cinerary Urn and a Scraper from		Rossie Ochil, Forgandenny, Perthshire,	
Mound at,	11	Flint Arrow-head from,	14
Quern from Finavon Fort,	75, 76	Ross-shire: <i>see</i> Altnamain, Edderton;	
— — — — — found at Jarlishof,	90, 96, 102, 304, 308	Applecross; Bragar, Lewis; Culrain,	
— — — — — Snuff: <i>see</i> Snuff Quern.		Hill of,	
		Rothiemay, Katherine, Lady,	232 f., 240

INDEX.

551

	PAGE		PAGE
Rothiemay, Banffshire, the Barony, Castle, and Church of,	223	Scrapers (<i>contd.</i>):—	
— Cairns near,	225	Flint (<i>contd.</i>):—	
— Place-name,	229	found near Midhowe Broch, (donation)	438
Roxburghshire: <i>see</i> Abbotsford; Cessford Castle; Eildon Hills; Newstead.		from Nears, Rousay, (donation)	438
Rudh an Duin, Port Charlotte, Islay, Site of Cliff Fort,	84	.. Newhouse, Hüllion, Rousay, (donation)	323, 437
Rudh' an Dunain, Skye, Relics from, presented,	15	.. Quendale Mound, Rousay,	11
Rudha Bhuidhe, Islay, Dun at,	81	Quartz, from Jarlshof,	96
Ruigh-ic-ille Mhuire, Glen Urquhart, Inscribed Stone from,	435	Sculpturings, Rock, on Traprain Law,	122
Russell, J. H., on Bronze Age Teeth at Knappers, Kilbowie,	379	Seafeld, Trustees of Caroline, Countess of, Inscribed and Symbol Stones deposited on loan by,	435
		Seal of North British Fresh Fish Supply Company, (donation)	249
St Denis (Denneis) Fair,	245	Segelken, Hinrick, Bremen merchant in Shetland,	27, 35
St Drostan's Fair,	245	Shake-fork, The Cunninghame, on Spoons, 139, 141	
St Peter's Well, Rothiemay,	244	Sheep-shearing, Hand Protector, from Macedonia, (donation)	14
Saltoun, Alexander Abernethy, 6th Lord,	231	Shergarten, Luss, Dumbartonshire, White Quartz Arrow-head from,	12
— Dame Margaret Stewart, Lady,	232	— — — — Sculptured Rock near,	416
— Lord, Rothiemay owned by,	230	Shell, Objects of: <i>see</i> Beads; Snuff-box.	
— William Abernethy, 2nd Lord,	239	Shells, Limpet, from Jarlshof,	95
Samian Ware: <i>see</i> Pottery.		— from Knowe of Yarso Chambered Cairn,	341 f.
Sampler, Linen, from West Lothian, (donation)	119	— in Siccar Point Fort,	158
Samuel, Sir John S., Death of,	4	<i>See</i> Oyster Shells.	
Sands, Lord, Death of,	4	Shetland, Stone Mould and Whorl found above Dale Voe,	15
— — — — Obituary Notice of,	6	— Tombstones,	27
Sarcophagus at Luss,	419	— Trade and Fishing in sixteenth century,	31 ff.
Saw, Flint, from Cist found near Meikleour,	403	<i>See</i> Baltasound, Unst; Coloadale, Unst; Culbinsturgh, Bressay; Jarlshof, Sumburgh; Lunda Wick; Reafirth; Scousburgh; Windhouse.	
— — — — from Newhouse, Hüllion, Rousay, (donation)	437	Shevack Burn, also called Burn of Insh,	466
Saws, Slate, from Prehistoric dwelling at Jarlshof,	96, 101	Shewalton Moor, Irvine, Ayrshire, Scrapers from,	12
Scott, John, Goldsmith,	141	Ship, Viking, drawing of, from Jarlshof,	308
— William, presents two Medals,	322	Shovel-like Implements of Slate from Jarlshof,	100-1
— W. Lindsay, on the Chambered Cairn of Clettraval, N. Uist,	480	Siccar Point, Cockburnspath, Berwickshire, Fort on,	157
Scousburgh, Shetland, Lands of,	45	— — — — Relics from,	158
Scrapers:—		Silver, Objects of: <i>see</i> Brooches; Medal; Rings.	
Chalcedony and Flint, from Shewalton Moor, Irvine, (donation)	12	Sim, Rev. G. Ard, Death of,	4
Chert and Flint, from Airhouse, (donation)	247	Simpson, Professor J. Y., Death of,	4
Flint:—		— Dr W. Douglas, on the Barony, Castle, and Church of Rothiemay,	223
from Freswick Links, (donation)	246		
.. Hüllion, Rousay, (donation)	437		
.. Knowe of Yarso Chambered Cairn,	335, 337		
.. Loanhead of Daviot Stone Circle,	180 f., 192		

	PAGE		PAGE
Simpson, W. Douglas, on the Castles of Dunnideer and Wardhouse, in the Garioch, Aberdeenshire,	460	Stewart of Ardsheal, Family Relics presented,	323
Sithean Mor, Vallay, N. Uist, Bone Pin from,	21	— Sir James, of Killeith,	230
Skeletal Remains: <i>see</i> Human Remains.		— Mr, presents Flint Arrow-heads,	14
Skeletons in Broomend of Crichtie and Foularton Stone Circles,	446 f.	Stewart-Lockhart, Sir James H., presents the Stewart of Ardsheal Family Relics,	323
Skene of Dyce at Dunnideer,	468	Stirton, Rev. Dr John, presents a Brooch,	247
Sillet, Steatite, Handle of, from Jarlshof,	317	Stolberg, Louise de: <i>see</i> Albany, Countess of,	
Skitten, Wick, Caithness, Fort at,	108	Stone Circles:—	
Skye: <i>see</i> Rudh' an Dunain,		Bronze Age Ware found in,	195
Slabs, Sculptured, from Kilmory Knap, Cast of, (donation)	16	Broomend of Crichtie,	444 f.
Slag, Bronze, in Loanhead of Daviot Stone Circle,	172	Cullerlie, Echt,	215
Smellie, Thomas, elected,	3	— Pottery and Worked Flint from,	217
Smith, John (St Boswells), Death of,	4	Cup-marks found in,	189 f., 194
— — — B.Sc., elected,	9	Foularton, Kintore,	445
— Mrs T. S., presents a Barley Measure,	11	— Pottery from,	447 f.
Snecks, Bone, from Viking dwelling, Jarl- shof,	293	Loanhead of Daviot, Excavation of,	168
Snuff-box, Shell, given by Lady Appin to Mrs Stewart, Invernahyle, (dona- tion)	323	— Cup-marks at,	189 f.
— Quern from Coloadale, Shetland, (donation)	20	— Relics from,	172
— Spoon, Bone Object-like, from Vallay, (purchase)	21	Old Keig, Pottery, etc., from, presented,	119
Socket Stone, (donation)	118	Stones:—	
Souter, George, elected,	397	Hollowed, from Finavon Fort,	75
Soutia, Tannadice, Angus, Flint Arrow- heads from,	14	Inscribed, from Ruigh-ic-ille Mhuire, Glen Urquhart,	435
Spear-head, Bronze, from Duddingston Loch, (purchase)	440	Sculptured, from Bullion, Invergowie, (donation)	15 f.
— — — from near the Eildon Hills, (pur- chase)	439	Spatulate Tools, from Jarlshof,	95, 96
Spoon, Bone, from Jarlshof,	293	Vessels, Steatite, from Jarlshof,	93, 102
— Latten, from Birrenswark, (purchase)	441	Worked, from Cletraval Cairn,	515 f.
Spoons, Early Scottish,	138	Objects of: <i>see</i> Axes; Balls; Beads; Bowl, Steatite; Cup, Steatite; Discs; Hammer; Hammer-stones; Hones; Knives; Lamp, Steatite; Line- sinker; Loom-weights; Moulds; Playing-men; Polishers; Quern; Sarcophagus; Saws; Scrapers; Shovel-like Implements; Snuff Quern; Stoup, Holy-water; Tab- lets; Vessels, Steatite; Whetstone; Whorls,	
Spud, Iron, from Ardovie, Brechin, (dona- tion)	247	Stones, burnt broken, used by Norsemen in Cooking,	285
Standing Stones of Cullerlie, Echt,	215	— — Symbol: <i>see</i> Symbol Stones,	
Charcoal,	223	Stoup, Holy-water, at Luss,	418
Skeletal Remains from,	222	Straiton, Ayrshire, Communion Cups of,	9
Steatite, Lamp, from Jarlshof,	293	Stroma, Caithness, granted to John Kennedy of Kermucks,	46
— Mould, from Jarlshof,	293	Sutherland, Mrs Elizabeth, presents a Sampler,	119
— Urn and Whorl from Cairn, Freswick Links,	247	Sutherland: <i>see</i> Portnacoon,	
— Vessels from Pre-historic dwelling (No. V.) at Jarlshof,	93, 102	Swords:—	
— — — from Viking dwelling at Jarl- shof,	293, 317	Bronze, (purchase)	440
Steel, Miss Annie, elected,	246		

INDEX.

553

	PAGE		PAGE
Swords (<i>contd.</i>):—		Traprain Law, East Lothian. Rock Sculpturings on.	122
Bronze, from Duddingston Loch. (purchase)	439 f.	Troup, Rev. G. Elmslie, Death of.	4
Covenanter's, of Alex. Clark of Berryknowes, (donation)	398	Trudernish Point, Islay, Vitrified Fort at,	82
Symbol Stones from Drumbuie, Glen Urquhart.	435, 437	Tube, Bone, from Vallay. N. Uist, (purchase)	21
— from North Redhill.	228	Tuke, Rev. William M., elected.	3
— at Tillytarmont	227, 228	Tulliallan, Fife, Food-vessel from, (donation)	119
Symonstoune, David, Goldsmith,	144	Turn-buckles or Snecks, Bone, from Viking dwelling, Jarlshof.	293
Tablet with Scribings found in Broch of Jarlshof.	321	Tyrie Family at Dunnideer,	468
Tablets, Slate and Stone, with Drawings, from Viking dwelling, Jarlshof.	308	Uist, North: <i>see</i> Bachda Mor, Vallay; Sithean Mor, Vallay; Vallay.	
Tardenoisian Graver from Dryburgh Mains.	12	— South: <i>see</i> Howmore.	
— Micro-Burin in Scotland, the.	443	Umphrey, Katharine: <i>see</i> Neven.	
— Truncated Implement, with battered back, from Newhouse, Hutton.	323	— William.	42
Tartan, old Mactaggart, Piece of, (donation)	11	Unival, N. Uist, Chamber Tomb,	487
Taylor, George, presents a Cinerary Urn.	11	Urns:—	
Terminal, Bone, from Jarlshof.	306	from Knappers, Kilbowie.	362, 364, 372, 376
— Gold, from Cairnmuir.	455	Beaker:—	
Terraces, Cultivation: <i>see</i> Cultivation Terraces.		from Clettraval Chambered Cairn.	501
Terrets, Bronze, Celtic, Distribution of the "Don" type of,	450	(?) from Knowe of Yarrow Chambered Cairn.	334
— from France,	457	Fragments in Loanhead of Daviot Stone Circle,	172, 176, 179 ff., 182 ff., 187 f., 193 f.
— from Rhynie,	449	from Cist, Kirkcubbin, Penicuik, (donation)	248
Thistle Mark on Early Spoons.	151	.. Cist at Cawdor, Nairn.	397
— Order of the, Rise and Revivals of.	390	.. Cist at Mill Farm, Rathen.	382
Thomson, T. S., Death of.	4	Cinerary:—	
Thorburn, Sir Michael G., Death of.	4	from Blackburn Mill, Cockburnspath, (donation)	11
Tillytarmont, Banffshire, Symbol Stone.	228	at Horsburgh Castle Farm, Innerleithen, (donation)	262, 322
— Place-name,	228	found in Cist near Meikleour.	403
Tine, Red-deer, from Knowe of Yarrow Chambered Cairn.	337	from Quendale Mound, Rousay, (donation)	11
Titus, Coin of, from Partick,	9	Fragment of, from Skitten Fort.	110
Tobacco-box, Old Dutch, (donation)	118	Food-vessel, from Costerton Mains, Blackshiels, (donation)	13
Toggle, Bone, from Howmore, S. Uist, (purchase)	21	— from Knappers, Kilbowie.	355, 357 f.
— from Viking dwelling, Jarlshof.	317	— .. Knappers, Kilbowie, containing grain.	358, 380
Tokens, Communion, (donation)	15	— .. Knowe of Yarrow Chambered Cairn.	334
Tolland, Rev. James, elected.	246	— .. Tulliallan, (donation)	119
Tomb, Abernethy, in Old Church of Rothiemay,	244	Incense-cup, from Stone Circle, Loanhead of Daviot.	186, 193
— Chamber, Unival, N. Uist.	487	Sepulchral, from Loanhead of Daviot Stone Circle,	177 f.n.
Tombstones, More, Shetland.	27		
Toulouse, Battle of, Medal commemorating.	322		
Trade in Orkney and Shetland in sixteenth century.	31 ff.		

	PAGE		PAGE
Urns (<i>contd.</i>):—		Whorls:—	
Steatite, from Cairn, Freswick Links, (donation)	247	from Viking dwelling, Jarlshof.	293, 317
Ury, Stonehaven, Kincardineshire, Cist		Cetacean Bone, from Jarlshof.	318
Cremation at.	384	Lead, from Viking dwelling, Jarlshof. 295, 318	
— Water of, Glen Water the ancient name of.	466	— from Freswick Links, (donation)	246
Valentine, William H., elected.	322	Steatite, from Cairn, Freswick Links, (donation)	247
Vallay, N. Cist, Inverness-shire, Bone		Stone, from Finavon Fort.	52, 75
Needle-case from.	21	— Steatite, from Shetland, (donation)	15
— — — — — Objects from, (purchased)	21	Wick Harbour, Flint Axe from.	115
Vertebra of Whale found at Jarlshof.	89, 92	Wigtownshire: <i>see</i> Glenluce Sands.	
Vertebrae, Fish, from Jarlshof.	95	Wilson, Arthur W., elected.	435
Vessels, Steatite, from Jarlshof.	93, 102	— David, presents Base of Urn.	248
Viking Houses, Description of.	272	— Maurice J. H., elected.	3
— Period, dwelling of, at Jarlshof, Sun- burgh, Excavation of.	265	Windhouse, Shetland, Lands of.	45
— Relics from.	288	Windy Mains, East Lothian, Silver Spoon from.	147
Vitrification in Fort at Dunnideer.	462	Wood, J. R., Death of.	4
Vitrified Fort, Finavon, Excavation of.	49	— Charred, in Finavon Fort.	52, 55, 61, 64
“Wags” in Caithness,	287	Objects of: <i>see</i> Batons; Bismar; Combs.	
Ward, Edward, Death of.	4	Wood Carving, Bed-smother, from Orkney.	14
Wardhouse Castle, Aberdeenshire. 465, 466, 469		Wormald, Francis, on a Fragment of a thirteenth-century Calendar from Holyrood Abbey.	471
Wardrop, Robert N., elected.	118	Wrasse, Bones of, from Knowe of Yarso Chambered Cairn.	342
Waugh, Percival, Death of.	4		
Well, St Peter's, Rothiemay.	244		
Wells, Old, in Finavon Fort.	50, 67, 70		
Whale Vertebra found at Jarlshof.	89, 92	Yarso, The Knowe of, Rousay, Orkney, a Long, Stalled Cairn.	325
Wheelburn Law, Lauder, Berwickshire, small Cairns on.	167	— Relics from.	332
Whetstone from Clachanach, Iona, (dona- tion)	20	York, Henry, Cardinal, Autograph Letter of, presented.	323
		Young, T. P. W., elected.	3



.

.

82
142

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